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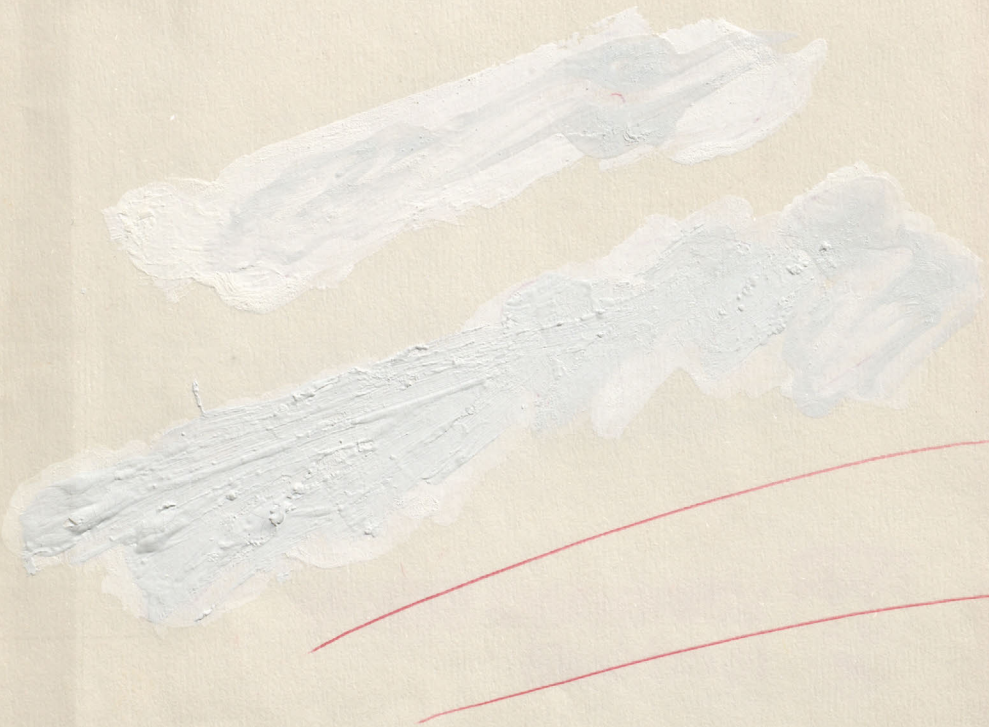

GENERAL ANNOUNCEMENT

1976/77

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McGill University
Montreal

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The University reserves the right to make changes without prior notice to the information contained in this publication, including the alteration of various fees schedules and the revision or cancellation of particular courses.

Students intending to seek membership in a professional corporation in Quebec are reminded that after July 1, 1976 they will be required to show that they possess a working knowledge of the French language, in conformity with the requirements of the Professional Code (Bill 250) and the Official Language Act (Bill 22).

REQUEST FOR APPLICATION FORM

PLEASE PRINT

NAME .....

STREET .....

CITY .....

PROVINCE OR STATE ..... ZONE.....

COUNTRY .....

An application for admission to McGill University may be obtained by completing this form, checking the appropriate square below, and returning the form to the appropriate address.

NOTE: REQUESTS FOR APPLICATION FOR THE 1977-78 SESSION SHOULD NOT BE MADE TO THE ADMISSIONS OFFICE UNTIL AFTER NOVEMBER 1, 1976.

RETURN TO:

Admissions Office
McGill University
P.O. Box 6070, Station A
Montreal, Quebec
Canada H3C 3G1

- ☐ Arts (including Bachelor of Social Work)
- ☐ Education
- ☐ Engineering (including Architecture)
- ☐ Management
- ☐ Nursing
- ☐ Physical and Occupational Therapy
- ☐ Science

RETURN TO APPROPRIATE FACULTY OR SCHOOL:

Faculty or School of
McGill University
P.O. Box 6070, Station A
Montreal, Quebec
Canada H3C 3G1

- ☐ Dentistry
- ☐ Law
- ☐ Medicine
- ☐ Music
- ☐ Religious Studies
- ☐ Education — Graduate Department
- ☐ Graduate School of Library Science
- ☐ Management — Graduate Department
- ☐ School of Social Work (Master of Social Work)

Summer Session ☐ and/or French Summer School ☐ and/or Continuing Education ☐

All other Graduate Studies return to appropriate department.

Please indicate field(s) of graduate study .....

RETURN TO:

The Registrar
Macdonald College, Quebec
Canada H0A 1C0

- ☐ Agriculture
- ☐ Food Science

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If Faculty Announcement also required, please indicate here. ☐

If residence application form also required, please indicate here. ☐

GENERAL ANNOUNCEMENT 1976-77

McGill University
P.O. Box 6070, Station A
Montreal, Quebec, Canada H3C 3G1

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1 THE UNIVERSITY

1.1 Administrative Officers

CONRAD F. HARRINGTON, C.D., B.A., B.C.L. (McG.), C.St.J.
Chancellor

W. R. EAKIN, B.A., B.C.L. (McG.)
Chairman of the Board of Governors

ROBERT E. BELL, C.C., B.A., M.A. (U.B.C.), Ph.D. (McG.), D.Sc. (U.N.B., Laval), LL.D. (Tor.), F.R.S., F.R.S.C.
Principal and Vice-Chancellor

EIGIL PEDERSEN, B.A. (Sir G. Wms.), M.A. (McG.), Ed.D. (Harv.)
Vice-Principal (Academic)

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Vice-Principal (Administration)

ALLAN C. McCOLL, D.F.C., B.Com. (McG.), C.A.
Vice-Principal (Finance)

WALTER F. HITSCHFELD, B.A.Sc. (Tor.), Ph.D. (McG.), F.R. Met. S.
Vice-Principal (Research)

A. C. BLACKWOOD, B.Sc., M.Sc. (Alta.), Ph.D. (Wis.), F.R.S.C.
Vice-Principal (Macdonald College)

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Secretary-General

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Registrar

N. DOUGLAS JOHNSTON, B.Com. (McG.)
University Treasurer

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HARRY E. GRIFFITHS, B.Com. (McG.), M.A. (Middlebury)
Athletics Director

CHARLES E. NOEL, B.Com. (McG.), C.A.
Business Operations, Director

RONALD G. KURANOFF
Chief Accountant

JOHN ARMOUR, AACCA
Comptroller

M. SAEED MIRZA, B.Eng. (Karachi), M.Eng., Ph.D. (McG.)
Dean of Students

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Development and Communication, Director

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Educational Development Office, Director

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Instructional Communications Centre, Director

GEORGE L. GEIS, M.A., Ph.D. (Col.)
Centre for Learning and Development, Director

JEAN DAVID, L.S.A. (Montr.), Ph.D. (Calif.)
Macdonald College, Registrar

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Macdonald College, Secretary and Co-ordinator of Administrative Services

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McGill Development Program, Executive Director

DONALD SUTHERLAND, B.A. (Tor.)
McGill-Queen's University Press, Director

JOHN E. BATES, B.Sc. (Lond.), B.Com. (Sir G. Wms.)
Management Systems, Director

PAUL M. MATTHEWS, B.A. (Ott.), M.Sc. (Fordham)
Personnel Services, Director

G. S. KINGDON, B.A.Sc. (Tor.)
Physical Resources Office, Director

A. DOUGLAS ELLIOTT, M.M., B.Eng. (McG.)
Physical Plant, Director

ANDREW ALLEN
Public Relations and Information Office, Director

EDWARD K. DESROSIERS, B.A., M.A. (McG.)
Research for Planning and Development Office, Director

JOHN G. LOHRENZ, M.D. (Man.)
University Health Service, Director

MARIANNE F. SCOTT, B.A., B.L.S. (McG.)
University Libraries, Director

1.2 Deans and Directors of Schools

DEANS

A. C. BLACKWOOD, B.Sc., M.Sc. (Alta.), Ph.D. (Wis.), F.R.S.C.
Vice-Principal of Macdonald College and Dean, Faculty of Agriculture

ROBERT VOGEL, B.A. (Sir G. Wms.), M.A., Ph.D. (McG.)
Arts

ERNEST R. AMBROSE, D.D.S. (McG.), F.I.C.D., F.A.C.D.
Dentistry

GEORGE E. FLOWER, B.A., M.A., (McG.), Ed.D. (Harv.)
Education

GERALD W. FARNELL, B.A.Sc. (Tor.), S.M. (M.I.T.), Ph.D. (McG.), Eng.
Engineering

WALTER F. HITSCHFELD, B.A.Sc. (Tor.), Ph.D. (McG.), F.R. Met.S.
Graduate Studies and Research

JOHN E. C. BRIERLEY, B.A. (Bishop's), B.C.L. (McG.), D.U. (Paris)
Law

STANLEY J. SHAPIRO, A.B. (Harv.), M.B.A., Ph.D. (Penn.)
Management

R. F. PATRICK CRONIN, M.D., C.M., M.Sc. (McG.), F.R.C.P. (Lond.), F.R.C.P. (C) **Medicine**

PAUL PEDERSEN, B.A. (Sask.), M.M., Ph.D. (Tor.) **Music**

JOSEPH C. McLELLAND, B.A. (McM.), M.A. (Tor.) B.D. (Knox), Ph.D. (Edin.), D.D. (Montr. Diocesan Coll.) **Religious Studies**

E. J. STANSBURY, M.A., Ph.D. (Tor.) **Science**

DIRECTORS OF SCHOOLS

DEREK DRUMMOND, B.Arch. (McG.) **Acting Director, Architecture**

GEORGE MARSAGLIA, B.Sc. (Colorado), Ph.D. (Ohio State) **Computer Science**

E. S. IDZIAK, M.Sc., D.Sc. (Delft) **Food Science**

EFFIE C. ASTBURY, B.A., B.L.S. (McG.), M.L.S. (Tor.). (*until June 1, 1976)* **Library Science**

JOAN M. GILCHRIST, B.N., M.Sc. (Appl.) (McG.), R.N. **Nursing**

HELEN M. GAULT, Dip. Ed. P.T. (Eng.), B.Sc. (P. & O.T.) (McG.) **Physical and Occupational Therapy**

DAVID E. WOODSWORTH, B.A. (Tor.), M.A. (Mich.), Ph.D. (Brandeis) **Social Work**

1.3 History

The Hon. James McGill, a leading merchant and prominent citizen of Montreal, who died in 1813, bequeathed forty-six acres of land and £10,000 to the already existing 'Royal Institution for the Advancement of Learning' upon condition that the latter erect "upon the said tract or parcel of land, an University or College, for the purpose of education and the advancement of learning in this Province"; and further upon condition that "one of the Colleges to be comprised in the said University shall be named and perpetually be known and distinguished by the appellation of 'McGill College'."

Owing to a lack of funds and persistent opposition, the complete University, which had been planned by the Royal Institution, was not built, but after years of litigation and effort a Royal Charter was granted in 1821 and the University of McGill College was opened in 1829 with what remained of James McGill's legacy as its endowment, and teaching started in the Faculties of Medicine and Arts. The Medical Faculty grew steadily, and after an amended Charter was secured in 1852 a new era of progress began for the Faculty of Arts with the appointment in 1855 of Sir William Dawson as Principal, a position which he held for thirty-eight years.

Since 1855 the University has grown vigorously, presently comprising twelve Faculties and seven schools. In 1899 the Royal Victoria College was opened, a gift of Baron Strathcona, to provide separate teaching and residential facilities for women students. Gradually, however, classes for men and women were merged, and now the University is wholly coeducational. In 1907 Macdonald College was established at Ste. Anne de Bellevue, as a residential college for Agriculture, Household Science, and, originally, the School for Teachers, which is now the Faculty of Education and located on the Montreal campus. The University's general development was greatly facilitated by the generosity of Sir William Macdonald, whose gifts to the University include a Physics Building, a Chemistry and Mining Building, and an Engineering Building, in addition to the college named after him.

At present more than nineteen thousand students are taking regular university courses. New buildings have been erected or acquired to provide the undergraduate and research facilities needed by the increased student body, and include residences, gymnasium, swimming pools and winter stadium as well as a University Centre and a concert hall.

1.4 Incorporated and Affiliated Colleges

INCORPORATED COLLEGES

Macdonald College

Macdonald College is situated at Ste. Anne de Bellevue, about twenty miles from Montreal. It consists of the Faculty of Agriculture and the School of Food Science.

Vice-Principal — A.C. Blackwood, B.Sc., M.Sc. (Alta.), Ph.D. (Wis.), F.R.S.C.

The Royal Victoria College

3425 University Street

The Royal Victoria College, a non-teaching college of McGill University, provides residential accommodation for women students.

Warden — Donna R. Runnalls, B.A. (U.B.C), B.D. (McG.), Ph.D. (Tor.).

AFFILIATED THEOLOGICAL COLLEGES

The Montreal Diocesan Theological College

3473 University Street

Principal — H. St.-C. Hilchey, M.A. (Tor.), B.D., D.D. (Wycliffe Coll.)

The United Theological College of Montreal

3473 University Street

Principal — J. A. Boorman, B.A. (Alta.), M.A., Ph.D. (Col.)

The Presbyterian College of Montreal

3495 University Street

Principal — Donald N. MacMillan, B.A. M.A. (McG.), B.D. (Presbyterian Coll., Montr.), Ph.D. (Edin.).

NOTE: The above three colleges train students for the ministry and grant certificates for ordination but they have remitted their degree-granting powers to the University.

1.5 Government

McGill University is a Corporation created by a Royal Charter granted by the Crown of the United Kingdom, a general supervisory power being retained by the Crown and exercised through the Governor-General as *Visitor*.

The *Governors* of the University constitute the Royal Institution for the Advancement of Learning, a corporation existing under the laws of the Province of Quebec. In them is vested the management of finances, the appointment, in consultation with Senate, of Professors, and other duties. Twenty-five of the Governors are elected by the Board from amongst those nominated by its Nominating Committee; five are elected by the Graduates' Society; five are elected by Senate from amongst its members, three elected by the non-academic staff from amongst its members, and three elected by students from amongst the student body. The Board elects the Chancellor of the University and also, from amongst its members, a Chairman to preside at its meetings, who may also be the Chancellor. The Chancellor and the Principal are *ex officio* members.

The *Chancellor* is Presiding Officer of Convocation and of Joint Sessions of the Board of Governors and the Senate.

The *Chairman of the Board of Governors* is President of the Royal Institution for the Advancement of Learning.

The *Principal* is the academic head and chief administrative officer. He is appointed by the Board of Governors after consultation with Senate. He also holds the office of *Vice-Chancellor* of the University and is, *ex officio, Chairman* of Senate.

Senate consists of eighty-four voting members: The Chancellor, the Principal, the Chairman of the Board of Governors, the Vice-Principals, the Deans of the Faculties, the Dean of Students, the Director of Libraries, the Director of the Centre for Continuing Education, the President of the Students' Society, all *ex officio,* forty-one members elected by their Faculties, five Governors elected by the Board (including the Chairman of the Board), two librarians elected by librarians performing the function of librarian in the University's library system, and fourteen students elected by the students. The Senate is the highest academic authority of the University and has control over admission, courses of study, discipline, and degrees.

The carrying out of the regulations of Senate along with primary responsibility for the conduct of the educational work of the University is entrusted to the various Faculties and Schools.

STUDENT GOVERNMENT

All students registered in the University are members of the Students' Society except for students governed by the constitution of the Macdonald College Students' Society and those students registered in the Faculty of Graduate Studies and Research who are non-resident students or full-time members of the teaching staff.

The executive and legislative authority of the Society is vested in the Executive Committee and Students' Council respectively. All undergraduate societies, major activities, clubs, societies, publications and other campus organizations of the Students' Society are under its jurisdiction.

Full details of the operations, constitution, officers and committees of the Students' Society are available from the Students' Society.

1.6 UNIVERSITY LIBRARIES

The McGill University Library system comprises five areas as follows:

(1) THE HUMANITIES AND SOCIAL SCIENCES AREA LIBRARY

THE McLENNAN LIBRARY COLLECTION:

a) *THE MAIN LOAN AND RESEARCH COLLECTION,* concentrated on the social sciences and humanities as well as other subjects — monographs, journals, documents, microfilms.
b) *THE REFERENCE COLLECTION* of encyclopaedias, dictionaries, bibliographical aids, indexing and abstracting services, etc.
c) *A CURRENT PERIODICALS READING ROOM,* housing approximately 3,000 titles.
d) *A GOVERNMENT DOCUMENTS COLLECTION AND READING AREA.*
e) *A RARE BOOKS AND SPECIAL COLLECTIONS DEPARTMENT.*

THE BLACKADER-LAUTERMAN LIBRARY OF ARCHITECTURE AND FINE ARTS houses approximately 52,000 items, numerous periodicals and architectural drawings.

THE EDUCATION LIBRARY contains approximately 100,000 items together with a Curriculum Laboratory holding tapes, films and other teaching aids and a collection of children's books. There is also a Physical Education library in the Currie Gymnasium.

THE ISLAMIC STUDIES LIBRARY contains approximately 75,000 items and a good collection of journals dealing with many aspects of the Muslim world past and present, with particular emphasis on the Humanities. About one half of the works are in English and other Western languages, and there is a good collection in Arabic, Persian, Turkish, Indonesian, and Urdu.

THE LIBRARY SCIENCE LIBRARY contains over 82,000 volumes of books and journals in the fields of publishing and library science.

THE MUSIC LIBRARY contains some 28,000 items, including reference books and periodicals, scores, tapes and records with listening facilities for records and tapes.

THE RELIGIOUS STUDIES LIBRARY contains 65,000 items in the fields of theology, philosophy, church history, and related subjects.

THE HOWARD ROSS LIBRARY OF MANAGEMENT contains more than 184,000 items in the fields of management, economics, industrial relations and business.

THE SOCIAL WORK LIBRARY contains nearly 32,000 items in the fields of social work, community organization, social sciences, and psychology. While the collection is mainly for the use of students of the School other students may read in the Library.

(2) THE LAW AREA LIBRARY

THE LAW LIBRARY contains over 179,000 items, including virtually all Canadian works, and the principal law reports of the United Kingdom, France and the United States, as well as a selection of reports from elsewhere.

(3) THE LIFE SCIENCES AREA LIBRARY

THE BLACKER-WOOD LIBRARY OF ZOOLOGY AND ORNITHOLOGY. This is an internationally known collection of some 71,000 items.

THE BOTANY AND GENETICS LIBRARY serves some of the needs of the Biology and Psychology Departments. It contains more than 16,000 books, periodicals, government publications and pamphlets.

THE DENTISTRY LIBRARY provides 10,000 books and periodicals for faculty and student use.

THE MACDONALD COLLEGE LIBRARY at Ste. Anne de Bellevue contains almost 217,000 volumes in the fields of agricultural and environmental sciences including food science.

THE MEDICAL LIBRARY contains over 170,320 items and receives approximately 2,000 current journals. This library is noted for its collection in the field of ophthalmology and its retrospective collection of European medical publications. It is open to all who have need to use its collections.

THE NURSING LIBRARY contains approximately 23,000 volumes and 244 periodical titles. Although the emphasis is on nursing literature, the collection reflects the entire curriculum, including economics, education and the social sciences.

THE OSLER LIBRARY OF THE HISTORY OF MEDICINE contains a collection of about 31,500 items in the history of medicine and allied science, and has, as a nucleus, the 8,000 volumes bequeathed to McGill by one of its most famous pupils and teachers, Sir William Osler. It is especially this portion which is rich in 15th, 16th, 17th, and 18th century medical books. The Library is constantly adding to the collection, especially new books on the history of all aspects of medicine and medical people. Undergraduates and all interested persons may use the Library.

(4) THE PHYSICAL SCIENCES AND ENGINEERING AREA LIBRARY

THE ENGINEERING LIBRARY OF 33,000 items contains an extensive collection of books, reference material and periodicals in the fields of civil, electrical and chemical engineering for the use of undergraduates, graduate students and faculty in Engineering.

THE PHYSICAL SCIENCES LIBRARY houses the Baillie Library of Chemistry, the A.N. Shaw Library of Physics, the Mining, Metallurgy, Geology and Chemical Engineering collections and contains the greater part of the University's collection in the physical sciences and houses in excess of 94,000 volumes of books, periodicals and government publications.

THE MATHEMATICS LIBRARY in Burnside Hall has a collection of approximately 6,200 items, mostly journals.

(5) THE UNDERGRADUATE AREA LIBRARY

THE UNDERGRADUATE LIBRARY. This is an open access circulating collection of approximately 118,000 items and is located in the Redpath Library building. Services include Reference, Reserves, Circulation and a Periodicals Reading Room. The audio-visual room and drop-in centre are located on the second floor. The Audio-Visual Room is furnished with 225 carrels equipped with audio-visual devices such as slide projector, tape recorder, filmstrip and super-8-loop projectors and television screens.

1.7 UNIVERSITY MUSEUMS

THE PETER REDPATH MUSEUM

Built in 1882, this was the first specially designed museum building in Canada. Its extensive collections, begun in the 1850's by the founder, Sir William Dawson, have been augmented over the years by gifts and bequests and are constantly expanding through curatorial field research. They are used for basic reference in graduate and undergraduate teaching and are not open to the public.

The Museum's holdings, which now include over a million scientific specimens, are especially rich in invertebrate palaeontology, specific areas of vertebrate palaeontology, palaeobotany, malacology, ornithology and ethnology. Particularly notable are the Carpenter Collection of Mollusca, the Dawson

Collections of Palaeontology, the Ferrier Collection of Minerals, and the African ethnological collection.

THE McCORD MUSEUM

This museum with one of the leading collections of Canadiana in the country, stems from the bequest of David Ross McCord in 1919. Notable accessions, including the Notman Photographic Archives, have been added over the years illustrating the history of Canada in general and Quebec and Montreal in particular. The Museum, at 690 Sherbrooke Street West, is open to the public on Fridays, Saturdays and Sundays from 11 a.m. to 6 p.m. Research is by appointment only, from Monday through Thursday.

THE LYMAN ENTOMOLOGICAL MUSEUM AND RESEARCH LABORATORY

Located on the Macdonald College campus, this institution has the largest insect collection of any Canadian University, and is second in both numbers of species and specimens only to the Canadian National Collection of insects, Ottawa. As its main function is research and not exhibition, it is not generally open to the public, but interested parties are encouraged to visit by appointment.

THE McGILL UNIVERSITY HERBARIUM

Established in 1820, the McGill Herbarium was combined with the Macdonald College Herbarium in 1972 to establish the 100,000 specimen McGill University Herbarium and is situated on the Macdonald Campus. It contains some of the earliest collections made in Canada. The collection is devoted to Quebec and eastern Canadian flora but specimens from the Arctic and sub-Arctic of Canada, Greenland, Sweden, Lappland and Siberia are well represented. Research facilities are available to any student or botanist working on northern plants.

OTHER COLLECTIONS

In addition to the above there are other collections and exhibits of a specialized nature, ordinarily open only to students but to which access may be gained by application to the department concerned. These include the Anatomical, Medical, Pathological and Zoological Museums.

Appointments for conducted tours may be made to see the Rutherford Collection of Experimental Physics.

1.8 RESEARCH INSTITUTES, CENTRES AND PROGRAMS

The Institutes and similar groups listed below carry out research and teaching in a number of specialized fields. In most of them facilities are available for qualified students who wish to take higher degrees.

INSTITUTE OF AIR AND SPACE LAW

The Institute provides for advanced study and research in air and space law and related problems of international law.

Director — Dr. Nicolas M. Matte.

ALLAN MEMORIAL INSTITUTE OF PSYCHIATRY

A Psychiatric Institute for teaching, research, and treatment. McGill University undertakes responsibility for the training and teaching facilities, and the Royal Victoria Hospital for the clinical work. Research facilities are provided for clinical and laboratory studies of clinical conditions and biochemical, physiological and psychological study of various aspects of behavioural disorders in animal and man.

Director — PROFESSOR M. DONGIER.

ANAESTHESIA RESEARCH DEPARTMENT

Electrophysiological and neurochemical studies on synaptic transmission in the brain: the aim is to identify the naturally occurring chemical transmitter and receptor substances and to analyse their modes of action and how these are influenced by general anaesthetics and other drugs acting on the central nervous system.

Director — PROFESSOR K. KRNJEVIC.

ANTHROPOLOGY OF DEVELOPMENT PROGRAM

The program coordinates and furthers research and teaching on the process of socio-economic development as it affects small communities in the Canadian north and in low-income countries.

Director — PROFESSOR R. F. SALISBURY.

AVIATION MEDICAL RESEARCH UNIT

The Unit deals with physiology of spatial orientation, vision and postural control.

Director — PROFESSOR G. MELVILL JONES

BELLAIRS RESEARCH INSTITUTE
St. James, Barbados

This is a multidisciplinary institute offering research opportunities in terrestrial and marine biology, geology, geography, climatology, and chemical and physical oceanography for researchers with academic interests in the tropical environments of Barbados.

Director — PROFESSOR FINN SANDER.

BIOMEDICAL ENGINEERING UNIT

The Unit is involved in research, teaching and consultation in the applications of engineering methods in medicine and biology. Current research is concerned with neuromuscular control, sensory mechanisms, auditory and vestibular systems, neural

communication, signal analysis, sensory aids, diagnostic evaluation of vestibular and cardiac systems, and hospital information systems.

Acting Director — PROFESSOR J. S. OUTERBRIDGE.

BRACE RESEARCH INSTITUTE

The Institute is concerned with the utilization of solar and wind energy for the supply and purification of water in order to improve the productivity of arid areas.

Director, Field Operations — T.A. LAWAND.

McGILL CANCER RESEARCH UNIT

McGill University Cancer Research Unit is supported by the National Cancer Institute of Canada. Principal field of research is tumor-immunology.

Director — DR. MARTIN G. LEWIS.

INSTITUTE OF COMPARATIVE LAW

The Institute of Comparative Law is devoted to graduate study and research in comparative public and private law, principally in civil and commercial law. Special attention is paid to international business law and related fields.

Director — PROFESSOR PAUL-A. CREPEAU.

COMPUTING CENTRE

The Computing Centre provides computer service for instructional, research and administrative purposes. Current equipment includes two large IBM systems, a 360 Model 75 and a 370 Model 158. The latter is dedicated to timesharing, permitting direct access from any location on campus equipped with a terminal. Facilities for card input and high volume printed output are available at several locations on the main campus and at Macdonald College.

Director — PROFESSOR W. D. THORPE.

CENTRE FOR CONTINUING MEDICAL EDUCATION
1110 Pine Ave. West

The Centre was established in 1973 to promote, integrate and organize programs in continuing medical education for the various departments of the Faculty of Medicine and the McGill teaching hospitals. Programs are also run by the Centre itself.

Director — DR. K. G. DAWSON.

DAIRY HERD ANALYSIS SERVICE (Livestock Population Genetics)
Macdonald College

Research in the dynamics of domesticated livestock populations with particular emphasis on the physiological and environmental factors that affect the estimation of the relative genetic merit of individual and groups of animals.

Director — PROFESSOR J. E. MOXLEY.

McGILL UNIVERSITY PROJECT FOR DEAF CHILDREN

This project is concerned with the identification and management of deafness in early infancy. Both basic and clinical research is undertaken. The work includes study of prosthetic devices, evaluation of training procedures and the development of testing techniques.

Director — PROFESSOR DANIEL LING.

CENTRE FOR DEVELOPING AREA STUDIES

The Centre attempts to coordinate research and graduate studies on development topics in both the social sciences and the applied sciences.

Director — PROFESSOR R. F. SALISBURY.

CENTRE FOR EAST ASIAN STUDIES

The Centre coordinates an interdisciplinary program of courses on China and Japan, with emphasis on the modern period.

Director — PROFESSOR PAUL T. K. LIN

FOSTER RADIATION LABORATORY

The Laboratory houses the experimental nuclear physics group and its research program is centred around a 100 MeV proton synchrocyclotron. The main theme of the current research activities is focused on the study of the nuclei lying far from the beta stability line. The level structure, β-decay, electromagnetic transition, delayed proton and alpha decay properties of these nuclei are investigated using very high speed pneumatic target transport systems, recoil gas jet sweeping system, an on-line mass spectrometer and a super-conducting beta ray spectrometer. The Laboratory is also equipped with excellent facilities for conventional β-τ spectroscopy studies and subnanosecond lifetime measurements.

Director — PROFESSOR S. K. MARK.

FRENCH CANADA STUDIES PROGRAM

This program is engaged in the study of French Canada at the undergraduate and graduate levels, by research, and extension and public education programs.

Director — PROFESSOR MAX DORSINVILLE.

GAULT ESTATE
422 rue des Moulins
Mont St. Hilaire

The Estate, a legacy from the late Brigadier A. Hamilton Gault, consists of 2700 acres of forested mountain 20 miles east of Montreal, including Lac Hertel and its complete drainage basin. The entire property is protected as a Federal Bird Sanctuary.

The twelve-hundred acre western sector, with four summits linked by a 15 mile network of trails, is open daily throughout the year to members of the University and the visiting public. No motorized vehicles are permitted beyond the parking area except on official business. No camping is permit-

ted at any time. Twelve hundred acres on the eastern shore of the lake form a Biological Reserve, to which access is restricted by permit for approved field research in the natural sciences.

Comfortable dormitory facilities are available for up to 32 persons, for classes and for individuals involved in ecological studies. A Day-Conference Centre is provided at Manoir Gault on Lac Hertel for groups of up to 50 persons. This can be used in conjunction with the dormitories. All arrangements must be made by written application to the Warden.

The Estate is also headquarters for the Mont St. Hilaire Nature Conservation Centre, which conducts a year round bilingual nature interpretation program for all ages. The Centre is supported entirely by outside funds, including grants from industry and fees for services rendered, and cooperates with educational institutions and community organizations to provide teacher training and counselling services in outdoor education.

Warden and Director of the Nature Centre — ALICE E. JOHANNSEN.

SCHOOL OF HUMAN COMMUNICATION DISORDERS
Beatty Hall, 1266 Pine Ave. West

The School of Human Communication Disorders offers both professional and research training in speech and hearing disorders at the graduate level. In addition to the teaching of specific techniques for diagnosis and therapy, special emphasis is placed upon understanding of fundamental principles and critical evaluation of current methods.

Director — PROFESSOR K. K. CHARAN.

INDUSTRIAL RELATIONS CENTRE

The Centre provides information, evening seminars, research on industrial relations; general labour relations, public conferences; publishes newsletters surveying developments in industrial relations in Canada, as well as research reports; maintains a computerized analysis of more than 1,300 Canadian collective agreements. Membership from the community includes crown corporations and Government agencies, industrial firms, hospitals and labour unions.

Director — PROFESSOR FRANCES BAIRSTOW.

INSTITUTE OF ISLAMIC STUDIES

McGill University's Institute of Islamic Studies is concerned with the disciplined study of Islamic civilization throughout the scope of its history and its geographical spread. It gives attention to the origins of Islam, to the rise of the civilization in which Islamic faith was the vivifying factor, to the forces which shaped the civilization and the changes it has undergone. It is also concerned with the contemporary dynamics of the Islamic world as Muslims seek to relate their heritage from the past to the radical situation of modernity.

Director — PROFESSOR C. J. ADAMS.

CENTRE FOR LEARNING AND DEVELOPMENT

The Centre for Learning and Development helps to improve the learning environment, teaching practices and learning methods at all levels of education. At present its activities focus on university education and include dissemination of relevant information, consultation, workshops, and research.

Director — PROFESSOR G. L. GEIS.

McGILL MAGNET LABORATORY: Longueuil, Que.

This laboratory contains facilities for the production of intense magnetic fields, both continuous and pulsed, for the use of research workers whose scientific programs can benefit from their use.

Director — PROFESSOR D. R. STEVENSON.

MANAGEMENT INSTITUTE

The Management Institute provides a variety of services to managers in business, government and non-profit institutions. It offers courses and seminars designed to help middle and senior management people keep abreast of current developments in analytical and decision-making techniques, and to provide a better appreciation of the integrative problems of general management.

Other activities include the Presidents' Seminar, Operation Catalyst and the McGill Conference on Industry and Government.

Director — PROFESSOR R. N. MORRISON.

MARINE SCIENCES CENTRE

The Centre is interdepartmental in scope, emphasizing the interdisciplinary nature of the science of oceanography. Excellent laboratory and library facilities are available, and opportunities for field work exist in the Arctic, the Gulf of St. Lawrence, the Canadian eastern seaboard, and at the Bellairs Research Institute in Barbados. Special research interests include the physics of sea ice, the energy exchange between atmosphere and hydrosphere, marine climatology, the dynamics of sea water, marine bacteria, growth and life cycles of marine organisms, marine productivity, marine biogeography and sedimentation.

Chairman — PROFESSOR M. J. DUNBAR.

McGILL-MONTREAL CHILDREN'S HOSPITAL LEARNING CENTRE
3640 Mountain St.

The Learning Centre has developed a comprehensive program to help and treat children with specific learning disabilities. Research into cognitive defects is continuous and the programs in the Centre are constantly reviewed.

Director — DR. SAM RABINOVITCH.

INSTITUTE FOR MINERAL INDUSTRY RESEARCH

Research at this Institute is concerned with all aspects of working environments which affect health and safety. This includes studies of dusts, ventilation, noise, chemical hazards and underground illumination.

Director — DR. G.W. GIBBS.

MONTREAL NEUROLOGICAL INSTITUTE AND HOSPITAL

The Montreal Neurological Institute and Montreal Neurological Hospital are concerned with undergraduate and graduate teaching in neurology, neurosurgery and the neurosciences, research in basic and clinical sciences related to the nervous system, and clinical care for patients with disorders of the brain and nerves.

Director — PROFESSOR WILLIAM H. FEINDEL.

MORGAN ARBORETUM
Macdonald College

Established in 1947 and located at Macdonald College, the Arboretum has 600 acres of woodland devoted to the study of woodlot management and the place of private forestry in the eastern Canadian economy; the study of forest values and their conservation; teaching, research, demonstration, and conservation education. About 100 acres have been planted in reforestation projects involving many coniferous and broad-leaved species. In addition, the Arboretum has an excellent collection of specimens of Canadian and foreign trees and shrubs.

Curator — PROFESSOR J. D. MacARTHUR.

McGILL CENTRE FOR NORTHERN STUDIES AND RESEARCH

The Centre encourages, promotes, undertakes and co-ordinates McGill's research and training programs relating to the North. In particular it is developing the interdisciplinary aspects of research. The function of the Centre is to assist the interchange of information among those engaged in Northern studies and research, to maintain records of all pertinent projects in the University, to provide information on the University's capacity to undertake Northern research, to prepare and assist others in the preparation of research proposals and the assembling of teams, and to serve as a liaison with other research and teaching organizations, industry and government.

The Centre encourages students to develop a continuing interest in the North and to follow careers relating to it. It co-ordinates lectures, seminars and academic courses on northern topics.

Director — PROFESSOR TREVOR LLOYD.

INSTITUTE OF PARASITOLOGY
Macdonald College

A cooperative venture of the National Research Council and the University for the study of parasitology in man and animals; it also cooperates with public authorities in diagnosis and the practical applications of parasitology and is the National Reference Centre for Parasitology.

Director — PROFESSOR NEIL A. CROLL.

PHONETICS RESEARCH LABORATORY

Research in acoustic phonetics and speech perception. Spectrographic analysis of speech, production of synthesized speech by means of an Electronic Vocal Analog. Languages investigated include English, French, Cree, Mohawk, Czech, Hungarian.

Director — PROFESSOR ANDRE RIGAULT.

PULP AND PAPER RESEARCH INSTITUTE OF CANADA

A separately incorporated non-profit research organization affiliated with McGill University and also with the Canadian Pulp and Paper Association and Department of the Environment but with its own board of control. Principal fields of research: pulp and paper technology, mechanical and chemical pulping, paper making, process control, product quality and environmental pollution. Also provides facilities to graduate students working in various departments of McGill University on research projects of interest to the pulp and paper industry.

President — DR. PIERRE R. GENDRON.

SHASTRI INDO-CANADIAN INSTITUTE

McGill University is a founding member of the Shastri Indo-Canadian Institute, a cooperative, voluntary organization, incorporated in Ottawa, whose members are the National Library and Canadian colleges and universities with an interest in Indian studies. Its objectives are to enhance the mutual understanding between India and Canada by supporting and promoting development of Indian Studies at Canadian institutions of higher learning. This is presently being done mainly by the provision of fellowships for persons residing in Canada to conduct scholarly research in the humanities and social sciences, and by the acquisition of Indian publications for scholarly use in Canada, and by summer programs to introduce undergraduates and school teachers to the field.

Executive Officer — Mrs. KAY DE LA RONDE.

SOCIAL SCIENCES STATISTICS LABORATORY

The laboratory is intended to promote quantitative teaching and research in the social sciences.

Director — PROFESSOR J. DANIEL KHAZZOOM.

SOIL MECHANICS RESEARCH LABORATORY

Research interests include fundamental soil mechanics, soil-water interaction, frozen soils, soil freezing and frost heave, thermal soil properties and mechanics, soil dynamics and soil-structure interaction, soil stability and constitutive behaviour,

ground water recharge, mobility and trafficability, and other related problems in soil engineering.
Director — PROFESSOR RAYMOND N. YONG.

McGILL SUB-ARCTIC RESEARCH LABORATORY
Schefferville, Quebec

This laboratory at Schefferville in the centre of Labrador-Ungava provides facilities for research in most aspects of the environment.
Director — PROFESSOR F. H. NICHOLSON.

1.9 Publications

The following official publications are issued by the University.

ANNOUNCEMENTS OF FACULTIES AND SCHOOLS
- General Announcement
- Undergraduate Scholarships and Awards
- Postgraduate Awards, Fellowships and Bursaries
- Faculty of Arts, Faculty of Science
- Centre for Continuing Education
- Faculty of Dentistry
- Faculty of Education
- Faculty of Engineering (including School of Architecture and School of Computer Science)
- French Summer School
- Faculty of Graduate Studies and Research
- Faculty of Law
- Graduate School of Library Science
- Macdonald College (Faculty of Agriculture and School of Food Science)
- Faculty of Management:
  - Bachelor of Commerce
  - Master of Business Administration
- Faculty of Medicine
- Faculty of Music
- School of Nursing
- School of Physical and Occupational Therapy
- Preparatory School of Music
- Faculty of Religious Studies
- Renseignements Généraux
- School of Social Work
- Summer Session

ANNUAL REPORT
CALENDAR OF DATES
DIRECTORY OF STAFF (Faculty and administrative staff. Limited distribution.)
ADMISSIONS INFORMATION FOR:
- Canadian Applicants
- Overseas Applicants
- Quebec Applicants
- United States Applicants
- Applicants to Education

GUIDANCE COUNSELLOR'S HANDBOOK
(Information on admissions and degree programs for counsellors in colleges and high schools.)

MAP OF McGILL UNIVERSITY — CARTE DE L'UNIVERSITÉ McGILL
McGILL PROGRAM PLANNER
McGILL REPORTER (Weekly newspaper during the fall and winter terms)
McGILL STUDENTS' GUIDE

2 ADMISSION

Director — PEGGY SHEPPARD, B.Ed.(McG.), B.A. (Sir G. Wms.)

Admissions Office
McGill University
P.O. Box 6070, Station A
Montreal, Quebec H3C 3G1

2.1 General

The academic year at McGill runs from mid-September until early May, with approximately two weeks' vacation at Christmas. While most students enter in September, it is possible to be considered for admission to certain programs in January and interested students should contact the Admissions Office in September 1976 for further information.

The deadlines for submission of applications for admission are March 1 for admission in September and November 1 for admission in January. All applications must be accompanied by a nonrefundable fee of $15.00 in Canadian funds payable by certified cheque or money order to McGill University.

Admission is selective, and students are reminded that fulfilment of the minimum requirements does not guarantee acceptance.

Although our Admissions Officers are always pleased to meet prospective students, a personal interview is not required for admission.

2.2 University Program

Quebec students who have completed a CEGEP program and who have obtained the Diploma of Collegial Studies are eligible to apply for entrance to the first year of a three-year University program (90 credits in most faculties) leading to one of the following degrees: Bachelor of Arts, Bachelor of Commerce, Bachelor of Education, Bachelor of Engineering, Bachelor of Civil Law (95 credits), Bachelor of Music, Bachelor of Science, Bachelor of Science in Agriculture, Bachelor of Science (Agricultural Engineering), Bachelor of Science in Food Science, Bachelor of Science in Nursing, Bachelor of Science in Physical Therapy, Bachelor of Science in Occupational Therapy, Bachelor of Social Work, Bachelor of Theology, or to a five year program leading to a degree in Medicine. After the Bachelor of Science (Architecture) degree is required for the Bachelor of Architecture degree and a university degree is required for admission to the Bachelor of Laws program.

Students who have completed an appropriate level of education outside the province of Quebec may be considered for entrance to a university program requiring three or four years of study (90 to 120 credits).

2.3 Entrance Qualifications

QUEBEC

Holders of the Diploma of Collegial Studies are considered for admission to the first year of an undergraduate program (90 credits in most faculties). Collegial students should refer to the "Structures d'Accueil aux Études Universitaires de Premier Cycle" to ensure that they are registered in an appropriate pre-university program.

PROVINCES OF CANADA OTHER THAN QUEBEC

Entrance to the Faculties of Arts, Education and Management:

Ontario Grade 13 students may be admitted directly to a 90 credit university program if they have completed five academic subjects (6 credits are granted for each subject with the exception of mathematics, each course of which receives 3 credits). English should be included in the student's program; the four elective courses should be appropriate to the program which the student wishes to enter at McGill. Students wishing to enter the Faculty of Management should include functions and relations and calculus as part of their Grade 13 program.

Students having only four subjects will be required to make up an additional six credits at McGill.

Students from provinces other than Quebec, Ontario*, and Newfoundland who have completed Grade 12 in academic subjects appropriate to the Faculty which they wish to enter may be considered for admission to a university program in Arts, Education or Management requiring the completion of 120 credits (normally four years of study).

Entrance to the Faculty of Science:

All programs in the Faculty of Science require that the student complete the equivalent of introductory college level courses in biology, calculus, chemistry, and physics. Students who have completed these courses with satisfactory performance prior to admission are given credit and/or exemption.

Ontario Grade 13 courses in biology, chemistry, and physics are accepted for exemption and each is allowed 6 credits. Grade 13 courses in mathematics are allowed 3 credits each; students who have included calculus in their program are required to complete calculus II at McGill unless they pass the Placement Test which may be written at McGill prior to registration. A maximum of 30 credits can be obtained for all Grade 13 work. Students planning application to the Faculty of Science should follow a pre-science academic program including mathematics and chemistry prior to Grade 13. A student who has completed Grade 13 is considered for admission to a university program requiring the completion of the difference between 120 credits and the number of credits which have been granted. For example, a student who has completed biology, chemistry, physics, two (or preferably three) courses in mathematics, and one non-science academic course, all at the Grade 13 level, enters a program requiring the completion of 90 credits.

Students from provinces other than Quebec, Ontario, * and Newfoundland who have completed Grade 12 in appropriate subjects may be considered for admission to a university program requiring the completion of 120 credits (normally four years of study). Students should have completed a course in functions or trigonometry and a course in chemistry at the Grade 11 or 12 level (preferably Grade 12 level). A course in physics is strongly recommended.

* Exceptions are sometimes made in the case of Grade 12 students with an average of over 80% in appropriate subjects. Such students may apply to a program requiring the completion of 120 credits in the following faculties and schools: Arts, Management, Nursing, Physical and Occupational Therapy, Science.

Entrance to the School of Nursing, School of Physical and Occupational Therapy:

Ontario Grade 13 students are considered for entrance on essentially the same basis as applicants to the Faculty of Science (see above). However, organic chemistry (3 credits), electricity and magnetism (3 credits), and calculus II are prerequisite courses which must be taken in addition to the regular degree program. To be considered for admission to a 3 year program, organic chemistry must be taken prior to admission. While students who have completed the organic chemistry requirement and who are lacking only electricity and magnetism and calculus II will be considered for admission, preference will be given to those students who have completed all the prerequisite courses. If admitted without electricity and magnetism and calculus II, the student would be required to take these courses during the summer after first year. It is very unlikely that they could be taken concurrently. Students who lack all three prerequisite courses can be considered for admission to a 4 year program of study.

Admission from other Canadian provinces is as for Science. Students who are admitted to a 120 credit program in Nursing, Physical Therapy, or Occupational Therapy take basic science courses in their first year. These students **must** also complete a course in organic chemistry during the summer after their first year of study if they are to advance to the first year of the professional program.

Entrance to the Faculty of Engineering and School of Architecture:

Students who have completed Grade 13 Ontario, Grade 12 in other Canadian provinces, or first year university in Newfoundland and who have a strong foundation in mathematics (including a course in trigonometry or functions), chemistry, and physics may be considered for admission to a four year pro-

gram (eight semesters in the Faculty of Engineering.

Students who have completed Grade 12 or Grade 13 Ontario and either a three-year program in technology at a community college or institute of technology, the first year of a four year program at a university, or an equivalent qualification may be considered for admission to a three year (six semester) program in the Faculty of Engineering. Applicants who are not fully qualified for admission to a three year program may be considered for admission to a program with one or two additional semesters to complete the degree requirements.

It is not possible to apply for admission to Architecture on the basis of Grade 12, Grade 13, or first year university in Newfoundland. Application to the School of Architecture can be made after one year of study in either the Faculty of Engineering or the Faculty of Science.

Entrance to other Faculties:

High school graduates are not eligible to apply for admission to the Faculties of Dentistry, Law, or Medicine. A minimum of two to three years of study in the Faculties of Arts or Science is required before seeking admission to Dentistry. A Bachelor's degree is necessary to enter the Faculties of Law and Medicine. A minimum of one year of study in the Faculty of Arts is required before a student may seek entry to the School of Social Work.

NON-CANADIAN APPLICANTS

Entrance to the Faculties of Arts, Education and Management:

High school graduates from the UNITED STATES may be admitted to an undergraduate program requiring the completion of 120 credits in the Faculties of Arts, Education and Management. All applicants should have followed academic programs designed for university entrance. Applicants to the Bachelor of Commerce program should present a strong background in mathematics including a course in trigonometry or functions. Students who have passed Advanced Placement examinations in appropriate subjects with a grade of "3" or better will be granted some advanced standing.

Students from the UNITED KINGDOM and COMMONWEALTH countries may be admitted directly into a university program requiring the completion of 90 credits (three years) in the Faculties of Arts, Education, and Management if they have completed three Advanced Level papers. An average grade of "C" or better, with no paper having a grade lower than "D", is required. It is expected that most students will have completed five G.C.E. papers at the Ordinary Level; one Ordinary Level paper must be English Language.

Students who have fewer than three Advanced Level papers can be offered admission; however, these students will be required to complete additional credits to fulfill the degree requirements.

Applicants to the Faculty of Management must have Advanced Level results in mathematics.

Students with very good grades in at least five appropriate Ordinary Level papers plus one full year of formal schooling beyond Ordinary Level may be considered for entrance to an undergraduate program requiring the completion of 120 credits (four years) in the Faculties of Arts, Education and Management.

Entrance to the Faculty of Science:

The programs in the Faculty of Science have been designed on the assumption that the student has completed, or will complete at McGill, the equivalent of introductory college-level courses in biology, chemistry, physics, and mathematics. These courses are referred to as prerequisite courses.

Graduates from Grade 12 in the UNITED STATES are considered for admission to a university program requiring the completion of the difference between 120 credits and the number of prerequisite credits they have earned. An Advanced Placement science course is considered the equivalent of 6 prerequisite credits; a grade of "3" or better is required for Advanced Placement credit to be granted. All applicants should have a strong background in mathematics (including a course in trigonometry or functions), chemistry, and physics. Biology is also desirable in the case of a student applying to one of the biological or health science programs.

Students from the UNITED KINGDOM and COMMONWEALTH countries are normally required to have completed examinations in five different G.C.E. subjects including English, chemistry, mathematics and physics, at least two of which must be at the Advanced Level. An average grade of "C" or better, with no more than one subject having a grade of "D", is also required. Such students are considered for admission to a university program requiring the completion of the difference between 120 credits and the number of prerequisite credits they have earned. Each G.C.E. Advanced Level paper in a science subject (biology, chemistry, mathematics, physics) with a grade of "C" or better is granted the equivalent of 10 prerequisite credits; a maximum of 30 credits can be granted for Advanced Level results; (a maximum of 10 credits is granted for papers in mathematics).

Students with very good grades in at least five appropriate Ordinary Level papers PLUS one full year of formal schooling beyond Ordinary Level will be considered for entrance to an undergraduate program requiring the completion of 120 credits.

Entrance to the School of Nursing and the School of Physical and Occupational Therapy:

Graduates from Grade 12 in the UNITED STATES are considered for admission on the same basis as for Science (see above). Students who are admitted to one of these programs take basic science

courses in their first year. These students must also complete a course in organic chemistry during the summer after their first year of study if they are to advance to the first year of the professional program.

Students from the UNITED KINGDOM and COMMONWEALTH countries must have completed G.C.E. Advanced Level examinations in biology, chemistry, mathematics, and physics, and must have achieved a grade of "C" or better in each if they wish to be considered for admission to a three-year program of study.

Students who lack these qualifications but who meet the entrance requirements for the Faculty of Science may apply for admission to that Faculty. Upon completing one year of study in appropriate courses they may then apply for admission to a three-year program in Nursing, Physical Therapy, or Occupational Therapy.

Entrance to the Faculty of Engineering and School of Architecture:

Graduates from Grade 12 in the UNITED STATES are considered for admission to a university program requiring the completion of eight semesters. Applicants should have a strong background in mathematics (including a course in functions or trigonometry), chemistry and physics. Students who have passed Advanced Placement examinations in mathematics, chemistry, or physics, with a grade of "3" or better receive some credit towards their program. It is not possible to apply for admission to Architecture on the basis of Grade 12; a minimum of one year of preparatory study in either Engineering or Science is required.

Students from the UNITED KINGDOM and COMMONWEALTH countries may apply for admission to a three-year program in Engineering or Architecture if they have passes in five G.C.E. Ordinary Level papers, including English, mathematics, physics, and chemistry, two years of study in the Sixth Form, and passes in Advanced Level papers in mathematics and physics. Applicants should have a grade of "C" or better in mathematics and physics. The program of study in the Sixth Form must have included one full year of English literature and composition, at least one full year of chemistry (a pass at the Advanced Level is desirable), and an acceptable course in the humanities or social sciences. Students lacking these latter requirements may be considered for admission to programs with one or two additional semesters to complete the requirements for a degree.

Students who have completed one year in the Sixth Form and who have results for one paper in mathematics at the Advanced Level may be considered for admission to a four-year program.

Admission to the School of Architecture is competitive and applicants are selected primarily on the basis of academic standing. Unless the student has achieved particularly outstanding results in Advanced Level papers in chemistry, mathematics, and physics, it is not possible to offer admission to Architecture prior to the completion of further studies in either Science or Engineering. Practical experience in architectural work is not required but may influence the Admissions Committee in selecting candidates.

Entrance to Other Faculties:

Students who have completed high school programs are NOT ELIGIBLE to apply for admission to the Faculties of Dentistry, Law or Medicine and the School of Social Work. As the number of students who can be admitted to these programs is severely limited, all students should realize that the completion of undergraduate studies in Arts or Science will not ensure eventual admission to any of the professional programs mentioned.

National Certificates Accepted for Admission:

Some of the national certificates accepted for admission to McGill are listed below. Depending upon the particular certificate, students are considered for admission to three or four year programs in most Faculties. It is not possible to apply for admission to Dentistry, Law, or Medicine on the basis of any of the certificates listed. In most instances, it is not possible to apply for admission to Architecture without further preparatory study.

Students requiring more specific information relative to entrance requirements should write to the Admissions Office. Admission is selective and better than average grades are required for admission.

COUNTRY — CERTIFICATE

Australia — Higher School Certificate; University Matriculation Certificate
Belgium — Certificat d'Humanités
Czechoslovakia — Vysvedceni o Maturitni Zkousce
France — Baccalauréat
Germany — Zeugnis der Reife
Greece — Akadimaiko
Hong Kong — Advanced Level results
India — Bachelor's degree (with First Division standing)
International Baccalaureate — Certificate of Baccalaureate*
Iran — Sixth Year Secondary Education Certificate
Iraq — Baccalaureate
Israel — Matriculation Certificate
Italy — Diploma di Maturita Classica; Diploma di Maturita Scientifica
Mexico — Bachillerato Unico
Lebanon — Lebanese Baccalauréat (2ième partie)
Netherlands — Getuigschrift (Gymnasium or Lyceum)
Norway — Examen Artium
Pakistan — Bachelor's degree (with First Division standing)
Sweden — Avgangbetyg

Switzerland — Federal Maturity Certificate, Type A, B, or C
Poland — Swiadectwo Dojrzalosci
United Arab Republic — General Secondary School Certificate
United Kingdom and Commonwealth — Advanced Level results
Vietnam — Vietnamese Baccalauréat (2ième partie)

* A maximum of 30 credits is granted for International Baccalaureate results. No credit is granted for Physical Science; students who have written the Physical Science examination may receive credit for physics and/or chemistry by writing a Placement Test a McGill prior to registration.

2.4 Additional Entrance Requirements

1) Application for admission to undergraduate programs must be made on forms supplied by the Admissions Office BEFORE MARCH 1 if the student is applying for entrance in September. Supporting documents should be sent as soon as they are available if they cannot be sent with the application.

2) STUDENTS FROM THE UNITED STATES must write College Entrance Examination Board tests: the Scholastic Aptitude Test and three other achievement tests appropriate to the program which they wish to enter at McGill. Applicants to a science or engineering program should select a minimum of two tests from biology, chemistry, mathematics, and physics.

Students from the Eastern United States may obtain information about the tests by writing to:
The College Entrance Examination Board
Box 592
Princeton, New Jersey 08540

Students from the West should write to:
The College Entrance Examination Board
Box 1025
Berkeley, California 94701

STUDENTS FROM OVERSEAS are advised to write CEEB Aptitude and Achievement tests to support their application.

3) APPLICANTS WHOSE MOTHER TONGUE IS NOT ENGLISH, and who have not completed a CEGEP program in the province of Quebec, must submit acceptable evidence of facility in English BEFORE THEIR APPLICATION FOR ADMISSION CAN BE CONSIDERED. The following evidence is acceptable: G.C.E. Ordinary and Advanced Level examinations in English literature or composition; The Test of English as a Foreign Language (TOEFL); The University of Michigan English Language test; the Certificate of Proficiency in English issued by the Universities of Cambridge and Michigan.

TOEFL is preferred by the University; it is administered by the College Entrance Examination Board and is easily available throughout the world.

IT IS THE STUDENT'S RESPONSIBILITY TO MAKE THE NECESSARY ARRANGEMENTS WITH THE EXAMINING BOARD TO WRITE THE TEST IN THE COUNTRY OF RESIDENCE. Students who cannot obtain a TOEFL bulletin and registration form locally should write well in advance for them to: Test of English as a Foreign Language, Box 899, Princeton, New Jersey 08540, U.S.A.

2.5 Transfer Students

Each year McGill University admits well-qualified students transferring from other universities and colleges. These students must be those who would have been eligible to enter McGill as Freshmen and who have maintained a better than average academic standing in university work. In most Faculties, 60 credits or four semesters of work must be completed if a degree is to be granted; in the Faculty of Arts, the minimum requirement is 45 credits.

2.6 Mature Student Admission

Residents of Canada who will be 23 years of age or older by September 1 (for admission to the Fall Session) or January 1 (for admission to the Winter Session) and who lack the academic background normally required for admission may apply for entrance as mature students. An admissions policy for mature candidates is in effect in the Faculties of Arts, Education, Engineering, Management, and Science.

Individuals interested in being considered for entrance under this policy should contact the Admissions Office for further information.

2.7 Health Requirements for New Students

Along with the letter of acceptance to the University, all students will receive a Medical Questionnaire complete with a return envelope addressed to the Health Service. The student is requested to complete this questionnaire and to return it in the envelope at the earliest possible date. There may be additional requirements in certain faculties and schools.

An appointment will be made for all new students to be seen by a physician at the University Health Service as early as possible during their first academic year. At this interview the health of the student will be reviewed and if it is thought necessary, the student will be medically examined. The examination may include X-ray and other appropriate laboratory or diagnostic tests. Re-examination may also be required in the interest of the student or of others attending the University.

COMPULSORY HEALTH INSURANCE FOR NON-CANADIAN STUDENTS

All full-time non-Canadian students must take out a Health Insurance policy, which is available on a

group basis. In general, the policy provides for payment towards hospital, surgical, medical, diagnostic, and other medical expenses.

Full details and application forms are provided at registration.

2.8 General Information for Non-Canadian Students

Students who do not wish to live permanently in Canada enter the country as temporary residents (non-immigrants) and require some or all of the following documents:

1) PASSPORT. Required of all non-Canadian students except citizens of the United States. Students from the United States must bring with them evidence of their American citizenship such as their birth certificate, baptismal certificate, or passport. Students coming from the United States who are not citizens of that country should carry evidence that they are in the United States legally, and prior to their return should obtain a re-entry permit from the American Immigration Department.

2) VISA. Required of all students except British subjects, citizens of Commonwealth countries, citizens of Ireland and France, and permanent legal residents of the U.S.A. Visas are issued at Canadian Embassies, consular offices, and, in many countries, at Canadian immigration offices.

3) NON-IMMIGRANT STUDENT DECLARATION. Statement of conditions under which student is admitted to Canada.

4) VACCINATION CERTIFICATE. This is not required by the University but evidence of having had the disease of smallpox or of having been vaccinated within three years of arrival is necessary for entry to Canada for students from some countries (except the U.S.A., Western Europe and the United Kingdom) and this requirement should be checked with the appropriate Canadian authorities in the area.

5) MEDICAL CLEARANCE. Students staying longer than 12 months in Canada require a complete medical examination, including chest X-ray. A doctor's certificate of good health is not enough. The student pays for his own examination and X-ray.

6) LETTER OF ACCEPTANCE FROM A CANADIAN UNIVERSITY.

7) PROOF OF AVAILABILITY OF SUFFICIENT FUNDS for the entire period of study in Canada.

8) LETTER OF SPONSORSHIP. If a student is financed by an organization, he will require written authority from the sponsoring organization.

9) CANADIAN ENTRY CERTIFICATE. Issued to all students by immigration officer on admission to Canada.

A pamphlet describing immigration regulations in detail and containing notes and guidance to students from other countries is available from Canadian immigration offices, Canadian Embassies and British Consular offices, or from the Immigration Branch, Department of Manpower and Immigration, Ottawa, Canada. Local immigration officers will be ready to give advice and help.

A useful handbook entitled *University Study in Canada* can be obtained from Canadian Embassies, Consulates, and the office of High Commissioners and Trade Commissioners. A leaflet entitled *Notes for Foreign Students Who Wish to Attend a Canadian University* may be obtained from The Association of Universities and Colleges of Canada, 151 Slater St., Ottawa, Ontario K1P 5N1.

Students may wish to bring their wives or husbands to Canada with them. In this case, the student must show evidence of sufficient funds for his/her support.

2.9 Registration

Registration for the Fall Session takes place early in September and lectures begin shortly thereafter. Complete information is sent with the letter of admission, and Faculty counsellors are available in the weeks preceding the commencement of lectures to assist in the selection of courses.

2.10 Language Policy

The language of instruction at McGill is English. Students may write term papers and examinations in French, but reasonable competence in English is essential to succeed. A summer course, English 110-150C, is offered and it is recommended that students who lack fluency in English take this summer course *before* embarking on a program of study at McGill. Information and application material may be obtained by writing directly to the Summer Session Office.

3 ACADEMIC INFORMATION

3.1 Faculties and Schools

The twelve faculties and seven schools in McGill University offer the following degrees and diplomas: (Further details of programs in each faculty and school are given in the appropriate faculty or school announcement.)

3.2 Faculty of Agriculture

See Macdonald College, section 3.10.

3.3 Faculty of Arts

Dean — R. VOGEL, B.A. (Sir G. Wms.), M.A., Ph.D. (McG.).

DEGREES OFFERED

Bachelor of Arts (B.A.)
Bachelor of Social Work (B.S.W.)

The undergraduate work of the University in Humanities and Social Sciences is done in the Faculty of Arts.

DEGREE PROGRAMS IN ARTS

A student may take an Honours degree in any department, a degree of high concentration within one discipline and restricted to students who maintain a high level. All other students will choose an area of concentration (usually a "Major", but in some instances called a "Faculty" Program). The "Major" or "Faculty" Program can be in a single discipline or in one of several interdisciplinary fields. Full details of these programs will be available either in departments or from academic advisers, and general descriptions are available in the *Announcement of the Faculties of Arts and of Science.*

Listed below are the various programs leading to the B.A. degree.

Honours and Major Programs are offered in the following subjects:

Anthropology
Art History
Classics
East Asian Studies
Economics
English
French
Geography
German
History
History and Philosophy of Science
Italian
Jewish Studies
Linguistics
Mathematics
Middle Eastern Studies
Philosophy
Political Science
Psychology
Religious Studies
Russian
Sociology
Spanish

Joint Honours are also available. Please consult the appropriate departments.

In addition, the following **interdisciplinary majors and concentrations** are offered:

African Studies
Canadian Studies
Classics and Linguistics
French Canada Studies
Humanistic Studies
Industrial Relations
Latin American Studies
Modern Languages
Modern Literature
North American Studies
Faculty program in Mathematics and Philosphy
Faculty Program in Psychology and Mathematics
Faculty Program in Psychology, General

Social Work: The undergraduate program of professional studies begins in the first year of the three-year program. For further information see the *Announcement of the Faculties of Arts and of Science.*

ENTRANCE REQUIREMENTS

See Section 2.

TRANSFER STUDENTS

All students from other universities who wish to transfer credits to the Faculty of Arts must apply in writing to:

The Admissions Office
McGill University
P.O. Box 6070, Station A
Montreal, Quebec H3C 3G1

3.4 *Faculty of Dentistry*

Dean — E. R. AMBROSE, D.D.S. (McG.), F.I.C.D., F.A.C.D.
Strathcona Anatomy and Dentistry Building
3640 University Street
Montreal, Quebec
H3A 2B2

DEGREES OFFERED

Doctor of Dental Surgery (D.D.S.)
Period of Study in the Faculty for the degree is four years.
Granted under the Faculty of Graduate Studies and Research:
Master of Science in Prosthodontics and Restorative Dentistry (M.Sc.)
Two additional years after the D.D.S.

Master of Science in Oral Surgery (M.Sc.)
Three additional years after the D.D.S.

ENTRANCE REQUIREMENTS

The minimum requirement for admission to the study of dentistry is the satisfactory completion of EITHER the Collegial program in the Province of Quebec OR two full years in a four-year program leading to the B.A. or B.Sc. degree (or the equivalent thereof). In each instance the program must include one full year course in each of the following subjects: mathematics; physics, with laboratory; inorganic or general chemistry, with laboratory; organic chemistry, with laboratory; general biology or zoology, with laboratory (one half year of botany and one half year of zoology will be accepted but not one year of botany alone).

Canadian applicants are requested to write the Canadian Dental Association Aptitude Test and have the results sent to the Faculty. Detailed information may be obtained from the Administrator, Dental Aptitude Test Program, The Canadian Dental Association, 234 St. George Street, Toronto, Ontario, M5R 2P2.

Candidates applying from the United States should write the American Dental Association Aptitude Test and have the results sent to the Faculty.

APPLICATIONS

Application forms for admission to the Faculty may be obtained from the Secretary of the Faculty. The deadline date for receipt of applications is March 1

of the year in which the candidate is seeking admission.

Entering students are advised to make themselves familiar with the specific regulations of the province or state in which they intend to practise upon graduation and to take the necessary steps to become registered.

For details see the *Announcement of the Faculty of Dentistry.*

3.5 Faculty of Education

Dean — GEORGE E. FLOWER, B.A., M.A. (McG.), Ed. D. (Harv.)

The Faculty of Education is responsible for the professional education of teachers. It offers a variety of programs by which candidates are prepared for a teaching career in the elementary and secondary schools and colleges of Quebec. Successful completion of any of these programs qualifies the eligible candidate for a Teaching Permit issued by the Quebec Department of Education. For details see the *Faculty of Education Announcement.*

Graduate work leading to the Master of Arts in Education, Master of Education, and Doctor of Education degrees is offered under the authority of the Faculty of Graduate Studies and Research of McGill University. For details see the *Announcement of the Faculty of Graduate Studies and Research, Section G".*

DEGREE OFFERED

Bachelor of Education (B.Ed.)

DEGREE PROGRAM

The three-year program leading to the B.Ed. degree is available with the following options:
Elementary — Pre-School.
Elementary — Early Childhood.
Elementary — Later Childhood.
Secondary — Major in one Teaching Subject.
Secondary — Two Subject Option.

Special Areas — Art, French, Physical Education, Home Economics, Religious Studies (Protestant, Catholic or Jewish).

The B.Ed. (Elementary Option) is available also on a part-time basis to those who:

(a) hold a teaching certificate valid in Quebec or its equivalent; and
(b) have Quebec Diploma of Collegial Studies standing or its equivalent (i.e. a minimum of 13 years of attested studies).

ENTRANCE REQUIREMENTS

Successful completion of a Diploma of Collegial Studies program or equivalent. (See Section 2, Entrance Qualifications).

McGILL DIPLOMA IN EDUCATION PROGRAM

A one-year program leading to the McGill Diploma in Education and to a teaching permit for elementary or secondary schools and for Technical-Vocational and Business Education subjects in secondary schools. Eligible candidates must normally possess a university degree with a major (six full courses) in one subject taught in elementary or high schools or a minimum of three full courses in each of two such subjects.

McGILL DIPLOMA IN EDUCATIONAL ADMINISTRATION

A part-time program, the equivalent of one full year of study, is available in Educational Administration for teachers possessing a university degree, a teaching certificate and administrative experience.

CERTIFICATE PROGRAMS

One-year programs leading to a Quebec Teaching Permit in the following options:

Technical-Vocational (Secondary)
Business Education (Secondary)

Candidates for these options must possess a Diploma of Collegial Studies or its equivalent in the appropriate field of study. Appropriate work experience is also required. Similar 30 credit programs are available in these options on a part-time schedule for candidates who meet admission requirements (above) and who are employed as teachers of these subjects in Quebec high schools.

A part-time 30 credit program leading to a **Certificate in Second Languages (English or French)** is offered to certified teachers who possess oral and written competence in the language they wish to teach as a second language in an elementary school. Normally candidates must be recommended by the employing school board. Other applicants should contact the Chairman of the Department of Education in Second Languages.

A 30 credit in-service program leading to Provincial Certification at secondary or elementary levels (except in Physical Education) is offered for candidates who possess a Quebec Provisional Teaching Authorization and a contract to teach full time with a recognized school board.

SPECIALIZED DIPLOMA PROGRAMS

The Faculty also offers specialized programs designed for certified teachers as follows:

Diploma in Special Education
Diploma in Reading Instruction
Kindergarten Diploma
Diploma in Educational Media

These programs meet provincial standards in regard to the upgrading of teacher classification and they may also be used as credit towards the McGill B.Ed. degree. (For specific information concerning any or all of these programs please refer to the *Faculty of Education Announcement).*

NOTE

It should be emphasized that possession of a bare passing standard will not automatically guarantee acceptance into the Faculty of Education. Preference will be given in any of the above programs to candidates having a second-class standing or better. Satisfactory letters of reference are also required and candidates for certain options may be required to attend an interview. All candidates for a Quebec Teaching Permit must also demonstrate fluency in the language of instruction (English or French).

APPLICATION FORMS

Application forms for full-time programs and further information concerning admission requirements may be obtained from:

Admissions Office
McGill University
P.O. Box 6070, Station A
Montreal, Quebec H3C 3G1

Application forms for part-time programs may be obtained from the Student Affairs Office of the Faculty of Education.

3.6 *Faculty of Engineering (including the School of Architecture and the School of Computer Science)*

Dean — GERALD W. FARNELL, B.A. Sc. (Tor.), S.M. (M.I.T.), Ph.D. (McG.), Eng.

Degree programs outlined below are described in detail in the *Announcement of the Faculty of Engineering.*

ARCHITECTURE

Acting Director — DEREK DRUMMOND, B.Arch. (McG.).

Degrees Offered

1) Bachelor of Science (Architecture), (B.Sc. (Arch.)).
2) Bachelor of Architecture (B.Arch.).

Period of Study

B.Sc. (Arch.): a minimum of three years.

B.Arch.: a minimum of one year after the McGill B.Sc. (Arch.) degree.

Entrance Requirements

Entrance requirements include successful completion of a Diploma of Collegial Studies in the Physical Sciences, or equivalent. Enrolment in the School is limited and admission is based on academic standing and aptitude (see Section 2).

Privileges of Holders of the Degree of Bachelor of Architecture

The Province of Quebec Association of Architects admits Canadian holders of the degree of Bachelor of Architecture to membership, and thereby to practice in the province, after completing two years' apprenticeship under conditions specified by the Association and after passing an examination in professional practice.

The School of Architecture is recognized by the Royal Institute of British Architects and the instruction given meets the requirements of the Board of Architectural Education of that body.

For complete details of program, courses, rules governing attendance and promotion, etc., see the *Announcement of the Faculty of Engineering.*

ENGINEERING

Degrees Offered

1) Bachelor of Engineering (B.Eng.), in the departments of Chemical, Civil, Electrical, Mechanical, and Mining and Metallurgical Engineering and Applied Geophysics.
2) Bachelor of Engineering (B.Eng.) (Honours), in the departments of Electrical and Mechanical Engineering.

Period of Study

A minimum of three years is required.

Programs

1) The Regular Program is designed to prepare candidates for a wide variety of careers in engineering. Graduates with high standing and an interest in university careers or other research activities are encouraged to continue their studies at the graduate level.
2) An Honours Program, available in the departments of Electrical and Mechanical Engineering, is designed particularly for students who intend to pursue research careers in these fields. Admission is at the discretion of the departments and is normally granted only to students who have demonstrated high ability in mathematics and physics at the collegial level.

Students who fail to maintain honours standing are required to transfer to the Regular Program.

Entrance Requirements

Entrance requirements are based on successful completion of a Diploma of Collegial Studies in the Physical Sciences or equivalent (see Section 2).

For complete details of programs, courses, rules governing attendance and grading, etc. see the *Announcement of the Faculty of Engineering.*

Privileges of Holders of the Bachelor of Engineering Degrees

Holders of these degrees are eligible for membership in numerous organizations in Canada and

abroad. More detailed information can be obtained from the chairmen of the departments concerned.

SCHOOL OF COMPUTER SCIENCE

Director — G. MARSAGLIA, B.Sc. (Colorado), Ph.D. (Ohio State).

Degrees Offered (Faculty of Graduate Studies and Research)

1) Master of Science (M.Sc.)
2) Master of Science (Applied) (M.Sc. (Applied))
3) Doctor of Philosophy (Ph.D.)

Undergraduate Courses

The School of Computer Science offers a number of undergraduate courses. Further information can be obtained from the *Announcements of the Faculty of Engineering* and *the Faculty of Science.*

Postgraduate Programs

The requirements for entrance into and for successful completion of the Master's and Doctor's programs offered by the School of Computer Science may be found in the *Announcement of the Faculty of Graduate Studies and Research, Section "E", Physical Sciences and Engineering.* A list of the postgraduate courses offered by the School is published in the same Announcement.

3.7 Faculty of Graduate Studies and Research

Dean — W. F. HITSCHFELD, B.A.Sc. (Tor.), Ph.D. (McG.), F.R. Met. S.

The Faculty of Graduate Studies and Research offers programs leading to diplomas and degrees as follows:

DIPLOMAS

Air and Space Law
Advanced Social Work Practice
Engineering Aspects of Arid Land Development
Epidemiology and Health
Geological Sciences
Management
Mining Engineering

MASTER'S DEGREES

The Degree of Master of Architecture (M. Arch.) may be obtained in the following fields:

Architectural Design
Housing

The Degree of Master of Arts (M.A.) may be obtained in the following subjects:

Anthropology
Art History
Classics
Communications
Economics
Education
English
French
Geography
German
Hispanic Studies
History
Islamic Studies
Italian
Linguistics
Mathematics
Philosophy
Political Science
Psychology
Religious Studies
Russian
Sociology

The Master's Degree in Business Administration (M.B.A.)
The Master's Degree in Commerce (M. Com.)
The Master's Degree in Education (M.Ed.)
The Degree of Master of Engineering (M.Eng.) may be obtained in the following fields of Engineering:

Chemical
Civil
Electrical
Mechanical
Mining and Metallurgical Engineering and Applied Geophysics

The Master's Degree in Engineering (Mining) (M. Eng. (Mining))
Master's Degrees in Law:

1) **The Degree of Master of Civil Law (M.C.L.)** is offered in the Institute of Comparative Law.

2) **The Degree of Master of Laws (LL.M.)** is offered in the Institute of Air and Space Law and in the Institute of Comparative Law.

The Master's Degree in Library Science (M.L.S.)

The Master's Degree in Musical Arts (M.M.A.)

The Master's Degree in Nursing (Teaching) (M.N.)

The Master's Degree in Sacred Theology (S.T.M.)

The Degree of Master of Science (M.Sc.) may be obtained in the following subjects:

Agricultural Chemistry
Agricultural Engineering
Agronomy
Anatomy
Animal Science
Biochemistry
Biology
Chemistry
Computer Science
Crystallography
Electrical Communications
Entomology
Epidemiology and Health
Experimental Surgery
Fluid Mechanics
Geography
Geological Sciences
Geophysics
Glaciology
Horticulture
Human Communication Disorders
Marine Sciences
Mathematics
Meteorology
Microbiology and Immunology

Microbiology (Macdonald College)
Mining and Metallurgical Engineering and Applied Geophysics
Neurology and Neurosurgery
Oral Surgery
Otolaryngology
Parasitology
Pathology
Pharmacology
Physics
Physiology
Plant Pathology
Prosthodontics and Restorative Dentistry
Psychiatry
Psychology
Radiology
Renewable Resources
Soil Science
Wildlife Biology

The Degree of Master of Science (Applied) (M.Sc. (Appl.)) may be obtained in the following subjects:

Computer Science
Geological Sciences (Engineering Geology, Mineral Exploration)
Human Communication Disorders
Microbiology and Immunology
Nursing
Physical Therapy
Psychology

The Master's Degree in Social Work (M.S.W.)

The Master's Degree in Urban Planning (M.U.P.)

DOCTOR'S DEGREES

The Doctor's Degree in Civil Law (D.C.L.)

The Doctor's Degree in Education (D.Ed.)

The Doctor's Degree in Music (D.Mus.)

The Degree of Doctor of Philosophy (Ph.D.) may be obtained in the following subjects:

Administration
Agricultural Chemistry
Agricultural Engineering
Agronomy
Anatomy
Animal Science
Anthropology
Art History
Biochemistry
Biology
Chemical Engineering
Chemistry
Civil Engineering
Classics
Computer Science
Economics
Electrical Engineering
English
Entomology
Epidemiology and Health
Experimental Medicine
Experimental Surgery
French
Geography
Geological Sciences
German
History
Human Communication Disorders
Islamic Studies
Linguistics
Marine Sciences
Mathematics
Mechanical Engineering
Meteorology
Microbiology and Immunology
Microbiology (Macdonald College)
Mining and Metallurgical Engineering and Applied Geophysics
Neurology and Neurosurgery
Parasitology
Pathology
Pharmacology
Philosophy
Physics
Physiology
Plant Pathology
Political Science
Psychology
Religious Studies
Renewable Resources
Russian
Sociology
Soil Science

For complete information on all programs see the *Announcement of the Faculty of Graduate Studies and Research.* Application forms may be obtained from the Faculty Office.

GRADUATE FELLOWSHIPS

Inquiries about graduate fellowships, etc. which are open to graduates of other universities as well as of Canadian universities should be addressed to the Fellowships Office, Faculty of Graduate Studies and Research. See also the *Postgraduate Awards, Fellowships and Bursaries Announcement* available from the Faculty Office. Inquiries about assistantships should be directed to the individual Departments.

3.8 Faculty of Law

Dean — JOHN E. C. BRIERLEY, B.A. (Bishop's), B.C.L. (McG.), D.U. (Paris)
Chancellor Day Hall
3644 Peel Street
Montreal, Quebec
H3A 1W9

DEGREES AND DIPLOMA OFFERED

Bachelor of Civil Law (B.C.L.), and Bachelor of Laws (LL.B.).

Under the authority of the Faculty of Graduate Studies and Research the degree of Master of Civil Law (M.C.L.) is granted for advanced study in law, the degree of Master of Laws (LL.M.) for studies in the field of international air law and comparative law, and the degree of Doctor of Civil Law (D.C.L.) for higher studies in law. A graduate diploma in Air and Space law is also offered.

PERIOD OF STUDY

Period of study for the B.C.L. or LL.B. degree: Three years for one degree or four years for both degrees.

Students proceeding to the Quebec Bar and notarial profession are required to take additional training after graduation from the Faculty.

Students studying for the Bachelor of Laws degree (LL.B.) may proceed thereafter to the Bar Admission program of one of the Common Law provinces.

ENTRANCE REQUIREMENTS

To be qualified for admission to the Faculty a student must have obtained second class standing in the B.A. or equivalent degree from a university or college which is recognized by McGill University, or a diploma with a high standing from a Quebec General and Vocational College (CEGEP), or a Diploma of Collegial Studies from a Quebec university, and have substantial fluency in both the French and English languages. In exceptional cases students who do not intend to practise either the legal or notarial profession may be admitted to the Faculty with lesser academic qualifications if they are qualified to pursue with advantage the study of law. In all cases, admission is at the discretion of the Faculty. Between applicants who apply for admission to the LL.B. program, preference is given to those intending to proceed to both the LL.B. and B.C.L. degrees. Students entering the Faculty with a CEGEP diploma must take the B.C.L. degree before they are permitted to proceed to the LL.B. degree. *The attention of candidates holding CEGEP diplomas is drawn to the fact that admission to the Bars of the other provinces may require additional years of pre-law university education. In particular, the Law Society of Upper Canada requires an additional pre-law university year for those holding CEGEP diplomas.*

Candidates for admission to the Quebec Bar must be Canadian citizens and must hold a diploma from a Quebec General and Vocational College (CEGEP), or a Diploma of Collegial Studies from a Quebec university, or a B.A. degree or its equivalent from a university or college of which the degree is recognized jointly by Laval, McGill, Montreal, Ottawa and Sherbrooke Universities and, in addition, by the Bar.

Candidates for admission to the Quebec notarial profession must be Canadian citizens and hold a diploma from a Quebec General and Vocational College (CEGEP), or a Diploma of Collegial Studies from a Quebec university, or a B.A. of a university or college whose degree is recognized jointly by Laval, Montreal, McGill, Sherbrooke and Ottawa Universities for admission to their law courses, and also by the Board.

Candidates for the Bachelor of Laws degree (LL.B.) seeking entrance to the Bar Admission program of any of the Common Law provinces must satisfy the regulations of the particular Common Law province to the Bar admission course or program to which entrance is sought.

For details concerning staff, curriculum and also higher studies in the Institutes of Air and Space Law and Comparative Law see the *Announcement of the Faculty of Law.*

APPLICATIONS

The deadline for receipt of applications is February 1 of the year in which the candidate is seeking admission. Application forms may be obtained from the Faculty Admissions Office. All inquiries should be addressed to the Faculty.

3.9 Graduate School of Library Science (in the Faculty of Graduate Studies and Research)

Director — EFFIE C. ASTBURY, B.A., B.L.S. (McG.), M.L.S. (Tor.) *(until June 1, 1976.)*

DEGREE OFFERED

Master of Library Science (M.L.S.)
Period of Study: Two years.

ENTRANCE REQUIREMENTS

A B.A. or B.Sc. from a recognized university. Applicants are expected to have a knowledge of at least one language other than English. Academic standing of at least "B" (or second class) is required. For details see the *Announcement of the Graduate School of Library Science.*

3.10 Macdonald College

Macdonald College, Quebec
H0A 1C0

Macdonald College, which was founded and endowed by the late Sir William C. Macdonald, is incorporated with McGill University. It is situated twenty miles west of Montreal, at Ste. Anne de Bellevue, Quebec. It consists of the Faculty of Agriculture, which includes the School of Food Science.

All programs leading to the Bachelor's, Master's and Doctoral degrees are under the control of the Senate of McGill University; the Diploma program in Agriculture is under the direction of the Faculty of Agriculture.

FACULTY OF AGRICULTURE (Including the School of Food Science)

Dean — A. C. BLACKWOOD, B.Sc., M.S. (Alta.), Ph.D. (Wis.), F.R.S.C.

The work of the agricultural departments of the College falls into three main divisions: teaching, research, and extension. Teaching and research form the major part of their work. Extension activities are coordinated by the Extension Department and fall under the following: community programs, extension film library, extension courses, Macdonald Journal and an Information Service.

The School of Food Science is an integral part of the Faculty of Agriculture. The main function of the School is to provide professional education in Food and Consumer Sciences, including Home Economics.

DEGREES OFFERED

Bachelor of Science in Agriculture (B.Sc. (Agr.)).

Bachelor of Science in Agricultural Engineering (B.Sc. (Agr. Eng.)).

Bachelor of Science in Food Science (B.Sc. (F.Sc.)).

DIPLOMA OFFERED

Diploma in Agriculture.

ENTRANCE REQUIREMENTS

The Diploma of Collegial Studies in science or its equivalent is required for entrance.

By special agreement, the Nova Scotia Agricultural College, Truro, N.S., has arranged to provide their students with a program of studies permitting transfer to the Faculty of Agriculture at Macdonald College. Students who have completed such a program of study with satisfactory standing in courses equivalent to the Diploma of Collegial Studies will be admitted to the appropriate years in the Faculty provided that their overall averages and their grades in individual courses are considered satisfactory by the Committee on Admissions.

Students from outside Quebec who have completed Senior Matriculation or the equivalent will be considered for admission to a 120 credit program. If admitted they will be granted credit for some of the work done at the Senior Matriculation level and will be required to do additional Science and Mathematics.

Students transferring from other faculties or universities will be granted credits towards their degree for courses which they have passed at a satisfactory level and are considered equivalent to courses offered by the Faculty.

Successful completion of Secondary V is required for admission to the two-year Diploma in Agriculture program.

APPLICATION DATE

Applications for admission to the Faculty of Agriculture and the School of Food Science may be submitted until August 1 for fall admission and November 1 for January admission and may be obtained from The Registrar, Macdonald College, Que., H0A 1C0.

PROGRAMS OF STUDIES

The three-year program involves a total of at least 90 credits depending on the major chosen. Each major requires: (1) a certain number of required "core" credits, (2) credits elected in consultation with the Professor in charge of the major, and (3) free credits elected by the students.

The following programs of study are offered by the Faculty of Agriculture and the School of Food Science.

Bachelor of Science in Agriculture, B.Sc. (Agr.)

A 90 credit program from the Diploma of Collegial Studies leading to professional qualification in Agricultural Science (Agricultural Economics, Animal Science, General Agricultural Science, Plant Science, Soil Science) or in one of its related specialized branches in the Biological Sciences (Botanical Sciences, Environmental Biology, Microbiology, Zoological Sciences) and Renewable Resources Development (Environmental Conservation, Agricultural Land Planning and Development, Community Resource Development, Resource Economics and Planning, Wildlife Resources).

Bachelor of Science in Agricultural Engineering, B.Sc. (Agr.Eng.)

A 96 credit program from the Diploma of Collegial Studies leading to professional qualification in Agricultural Engineering. Holders of this degree are eligible for membership in professional engineering societies.

Bachelor of Science in Food Science, B.Sc. (F.Sc.)

A 90 credit program from the Diploma of Collegial Studies leading to the professional qualifications necessary for dietetics, or food science as well as the following regions in the Food and Consumer Sciences Area: Food Chemistry, Food Administration, Nutrition, Consumer Services and Home Economics.

Diploma in Agriculture

A two-year program in practical agriculture designed to prepare students for careers in agricultural production and management.

Postgraduate Programs in Agricultural Science

These lead to the degrees of Master of Science and Doctor of Philosophy, with study and research in one or more of the Departments of the Faculty or the School of Food Science. The program of studies and examinations are controlled by the Faculty of Graduate Studies and Research.

3.11 Faculty of Management

Dean — STANLEY J. SHAPIRO, A.B. (Harv.), M.B.A., Ph.D. (Penn.).

Samuel Bronfman Building
1001 Sherbrooke Street, West
Montreal, Quebec H3A 1G5

DEGREES, CERTIFICATES AND DIPLOMAS OFFERED

Bachelor of Commerce (B.Com.).

Certificate in Management (offered through the Centre for Continuing Education, in cooperation with the Faculty of Management, in a wide variety of areas).

Diploma in Management (Faculty of Graduate Studies and Research).

Diploma in Management (Tourism) (Faculty of Graduate Studies and Research).

Master of Business Administration (M.B.A.) (Faculty of Graduate Studies and Research).

Doctor of Philosophy in Administration (Ph.D.) (Faculty of Graduate Studies and Research).

Aims of the Undergraduate Program

Management means getting things accomplished as effectively as possible. The ideal manager is a well-rounded person, with strong character, good judgment, breadth of vision and thorough competence in the management skills — behavioural and quantitative — which are being developed in this age of rapid technological change.

When everything is changing at such a fantastic pace, it is no longer possible to train good managers by simply passing on to them wisdom developed in a past age. Experience can still be a great teacher, but only if intelligently interpreted and applied. Concepts must not be static; managers must be developed who can meet new challenges as they arise.

The different qualities required in a competent manager are teachable in varying degrees. The aim of the program is to give students an opportunity to master new management techniques, and also to broaden their outlook by optional courses in a wide variety of disciplines. There are certain management skills which constitute "core" subjects which every manager should have — but beyond these, students are encouraged to follow lines of interest through which they will emerge broadly educated. A good manager must be able to understand and to work with both the generalists and specialists that are required in our complex society.

DEGREE PROGRAMS AND REQUIREMENTS

GENERAL PROGRAM

The three-year program involves a total of 90 credits. Of these

(1) 42 credits are in "Primary Core" subjects, required of all students. Included are Accounting, Behavioural Science, Computers, Economics, Finance, Marketing, Mathematics, Operations Research, Policy, and Statistics.

(2) A further 18 credits are chosen for deeper study in a particular Management Concentration Group. These groups include Accounting, Computers and Systems, Finance, Industrial Relations, International Business, Marketing, Organizational Behaviour and Personnel, Policy, Small Business and Entrepreneurship, and Quantitative Methods.

(3) A further 12 to 18 credits are chosen from courses offered in other Faculties to help round out the student's overall background, and

(4) the remaining credits are chosen from the "Secondary Core" and unrestricted elective offerings.

Students who have adequate academic background in certain Core subjects will be given exemption from the required courses involved and will replace these courses by other courses offered by the Faculty.

An option of the General Program allows students to spend their middle year on the Macdonald College campus following an integrated course program to qualify for the Food Services administration option.

MAJOR AND HONOURS PROGRAMS

Major programs are available within the Faculty in Economics, Economics and Political Science, Industrial Relations, Mathematics and Psychology.

Honours programs are available within the Faculty in Economics, and Economics and Accounting.

ENTRANCE REQUIREMENTS

A Quebec applicant to the Bachelor of Commerce Program will generally be considered to satisfy the admission requirements if he has successfully completed a two-year pre-university CEGEP program, including one-term courses in each of differential and integral calculus. The student is strongly advised to include a wide variety of courses in his CEGEP program and to not concentrate on business and management subjects before entering the B.Com. program. Students from other provinces and countries will be considered for admission at a level commensurate with their academic attainments.

Individuals at least 23 years of age who have not completed CEGEP studies or their equivalent may be considered for admission as mature students.

Students wishing to enter the Bachelor of Commerce program may obtain application forms from:

Admissions Office
McGill University
P.O. Box 6070, Station A
Montreal, Quebec H3C 3G1

TRANSFER STUDENTS

Students presently enrolled in another Faculty of this University wishing to transfer to the Bachelor of Commerce program must apply in writing not later than July 1 to:

The Secretary of Admissions
Bachelor of Commerce Program
Faculty of Management
McGill University
P.O. Box 6070, Station A
Montreal, Quebec H3C 3G1

GRADUATE PROGRAM

Master of Business Administration
Faculty of Graduate Studies and Research

Period of Study: Two years.

Entrance Requirements

A Bachelor's degree with A or at least B average standing from an accredited college or university, a high score on the Princeton Admission Test for Graduate Studies in Business, and two letters of recommendation from current or former university teachers.

For further details of the above and the graduate diploma program in Management, see the *Announcement of the Faculty of Graduate Studies and Research, Section "I" or the Announcement of the Faculty of Management, Master of Business Administration.*

3.12 Faculty of Medicine

Dean — R. F. PATRICK CRONIN, M.D., C.M., M.Sc. (McG.), F.R.C.P. (Lond.), F.R.C.P.(C)

McIntyre Medical Sciences Building
3655 Drummond Street
Montreal, Quebec H3G 1Y6

DEGREES AND DIPLOMAS OFFERED

Doctor of Medicine and Master of Surgery (M.D., C.M.).

The degrees of M.Sc. and Ph.D. in Medical and Allied Sciences are granted under the authority of the Faculty of Graduate Studies and Research. For information see the *Announcement of the Faculty of Graduate Studies and Research.*

Diplomas for advanced study in Anesthesia and Psychiatry are granted under the authority of the Faculty of Graduate Studies and Research. Information is available from the Associate Dean (Postgraduate Education) of the Faculty of Medicine.

Period of Study in the Faculty for the Degree of M.D., C.M.: Four years.

Licence to Practise: The provincial Medical Boards define the requirements of fully licensed medical practitioners in each province. Final-year medical students wishing to apply for the examination of the Medical Council of Canada must do so before March 15. Details of the requirements of registration must be obtained from the Medical Board in the province where the student intends to practise.

ENTRANCE REQUIREMENTS

A. The Four-Year Program in Medicine

The normal requirement is the satisfactory completion of a course of study at a recognized college or university after the completion of Secondary School, leading to a Bachelor's degree.

The pre-medical work must include:

Physics — One full course with laboratory work.

Biology — One full course including studies of biology at the cell and molecular level.

Chemistry —

a) One full course of general chemistry with laboratory work.

b) One full course of organic chemistry with laboratory work.

In addition to the above requirements one full course in physiology (human and/or mammalian) with laboratory work is recommended. Applicants are also encouraged to have an adequate preparation in English literature and composition and mathematics. A working knowledge of the French language is recommended.

In selecting courses, in addition to the specific requirements listed above, an intending medical student should plan his pre-medical program as a whole, and in accordance with a definite educational objective. Emphasis should be placed on the broad educational value and the intellectual training afforded, rather than on the factual content of such pre-medical curricula; the student is therefore advised to select a major field which appeals to him; this major field may be selected from the natural or the social sciences or the humanities. Certain subjects which though not essential have been found valuable in medical study, and which may be included as electives if the curriculum in the major field permits, are psychology, sociology, genetics, anthropology, mathematics or languages.

Students with a strong interest in science and with aptitude for scientific studies should consider pursuing physiology, histology, biochemistry, anatomy or pharmacology at the B.Sc. level to a high standard, as all of these subjects provide an excellent background for entry to medical school.

Students are reminded that although the majority of applicants have completed their pre-medical studies in a Faculty of Science, successful applicants have been chosen by the Admissions Committee from other faculties including Arts, Nursing, Physical and Occupational Therapy, Dentistry, Law, Management, Education and Engineering, provided they have met the entrance requirements

B. The Five-Year Program in Medicine

Students from the Province of Quebec completing the two-year program in Quebec Colleges of General and Professional Education are eligible to submit an application.

Students in the first year of the five-year program will be registered in the Faculty of Science (medical preparatory — Med-P year), following which they proceed into the four-year medical program if a satisfactory academic standing is maintained. Such applicants complete the scientific pre-requisites for the four-year program during the Med-P year.

C. Equivalent (Advanced) Standing

Students are admitted only to the first and second years. An applicant to second year from another medical school must submit an official transcript of record and a Dean's letter of recommendation.

Medical College Admission Tests

All applicants are required to take the Medical College Admission Test. *For those applying to the four-year medical program the test must be taken prior to the close of Stage I application, January 15, 1977 (see below).* This test is conducted by the American College Testing Program (P.O. Box 414, Iowa City, Iowa 52240) at various centres in the spring and fall of each year. The 1976 MCAT date is October 2, 1976. The fall postmark registration deadlines are September 3 for those candidates testing in the United States, Canada and Puerto Rico; and August 30 for those testing in foreign countries. Registration materials should be available on college campuses about February 1, 1976. *Registration packets should not be mailed too close to the postmark deadline since past experience has shown that packets are sometimes postmarked a day or two after they have been put in a mail box.*

Applicants to the five-year medical program must write the Medical College Admission Test in the spring of their second collegial year. This test is conducted by the Association of American Medical Colleges, One Dupont Circle, N.W., Washington, D.C. 20036. Registration for this test must be made no later than January 31, 1977.

It is realized that English is not the first language of many applicants to this Faculty and this fact will be taken into account in assessing the results of the tests.

APPLICATION FOR ADMISSION

As the number of students in each class is limited, applications should be made as soon as possible after September 1 of the year prior to which admission is requested and no later than March 1 of the year of desired entry. Application forms must be obtained from the office of the Associate Dean (Admissions) of the Faculty of Medicine. All applicants (four- and five-year programs, Advanced Standing) will be asked to complete a Stage I application form which will be reviewed by members of the Admissions Committee. Selected applicants will be invited to complete a Stage II application. There is no fee for the Stage I application. The Stage II application must be accompanied by a non-returnable fee of $15.00 in the form of a cheque or money order payable to McGill University. Applicants currently enrolled at McGill University are not required to pay this fee. Although the great majority of the entering class is below the age of 27, older applicants will be considered.

Final Selection

After a review of the submitted application material, the Admissions Committee decides which applicants will be invited to come to the Faculty of Medicine offices for interviews with Committee members. The Admissions Committee judges applicants on the basis of academic achievement (entire academic record and MCAT) as well as personal qualities and attitudes.

3.13 Faculty of Music

Dean — PAUL PEDERSEN, B.A. (Sask.), M.M., Ph.D.(Tor.)

Strathcona Music Building
555 Sherbrooke St. West
Montreal, Quebec H3A 1E3

DEGREES AND DIPLOMAS OFFERED

Bachelor of Music (B.Mus.)
Master of Musical Arts (M.M.A.) (Faculty of Graduate Studies and Research)
Doctor of Music (D.Mus.) (Faculty of Graduate Studies and Research)
Licentiate of Music (L.Mus.)
Concert Diploma

PERIOD OF STUDY

B. Mus. degree — normally three years after the completion of the Diploma of Collegial Studies or its equivalent.
M.M.A. degree — minimum one year after B.Mus.
D.Mus. degree — two years after the M.M.A.
Licentiate — normally three years.
Concert Diploma — two years after the Licentiate.

PROGRAM OF STUDY
Bachelor of Music

The degree of Bachelor of Music can be obtained in any one of the following fields:

Composition

Major and Honours programs are offered in Composition. The Honours program is considered prerequisite for graduate studies in Composition.

Music History

Major and Honours programs are offered in Music History. The Honours program is considered prerequisite for graduate studies in musicology.

Performance

Major and Honours programs are offered in Music Performance. The Honours program is considered prerequisite for graduate studies in Performance.

Theory

An Honours program is offered in Music Theory. This program is considered prerequisite for graduate studies in Theory. Interdisciplinary programs are offered which combine Music Theory with studies in one of English, linguistics, mathematics, philosophy or psychology. The purpose of these programs is to prepare the student for graduate studies combining Music Theory with the other discipline.

School Music

Major programs are offered with two concentrations: Keyboard/Choral and Orchestral Instruments. These programs are prerequisite to studies in Education leading to certification as a Music Specialist in the Public School System.

Designated Major

Special programs of study in music may be proposed in consultation with Faculty advisors. Such special proposals must be approved by the Chairmen's Committee and by Faculty Council.

For details of these programs, please consult the *Announcement of the Faculty of Music.*

GRADUATE PROGRAMS

Graduate studies in music are offered by the Faculty of Music in conjunction with the Faculty of Graduate Studies and Research as follows:

Master of Musical Arts:

Studies leading to the M.M.A. degree are available in the fields of Composition, Musicology, Performance and Theory.

Doctor of Music

Studies leading to the D.Mus. are available in the field of Composition.

For details of these graduate programs, please consult the *Announcement of the Faculty of Graduate Studies and Research.*

LICENTIATE OF MUSIC DIPLOMA

The Licentiate of Music diploma program is specially designed for those instrumentalists and singers who wish to concentrate on their practical subject while limiting their theoretical studies to basic areas in History, Theory and Ear Training.

THE CONCERT DIPLOMA

This is a post-Licentiate diploma available only to specially gifted instrumentalists and singers who have the proven talent and capacity for a professional career as performers.

GENERAL INFORMATION

The McGill Faculty of Music is located in the Strathcona Music Building on the campus. The Faculty's facilities include classrooms; teaching studios; practice rooms; a library of books, scores and recordings; reading rooms; listening booths; an electronic music studio; and the Maurice Pollack Concert Hall.

Montreal, the largest metropolis in Canada, is not only a most stimulating city because of its bilingual, bicultural character, but it is also a music centre of the first order. The many concerts by the world's celebrated artists and ensembles at the Place des Arts; the annual concert series by the Montreal Symphony Orchestra, the McGill Chamber Orchestra, Société de Musique Contemporaine du Québec, etc.; opera and ballet presentations; the T.V. and radio concerts of the Canadian Broadcasting Corporation's French and English production centres; the presence of the Canadian headquarters of the Jeunesses Musicales with its beautiful concert hall and music camp at nearby Mont Orford; international music competitions; summer concerts — all these and many other events and attractions offer a unique opportunity of first-hand experience and study to the young music student.

Music Credit Options in the Faculty of Arts and of Science

The Faculty of Music offers two series of courses that may be taken for credit by students in the Faculty of Arts and the Faculty of Science. One series is a sequence of professional courses that deal with music theory and history and is part of the undergraduate music curriculum. These courses are open to those who have the necessary prerequisite studies in music. Selected Faculty of Music ensembles are open to students from other faculties by audition.

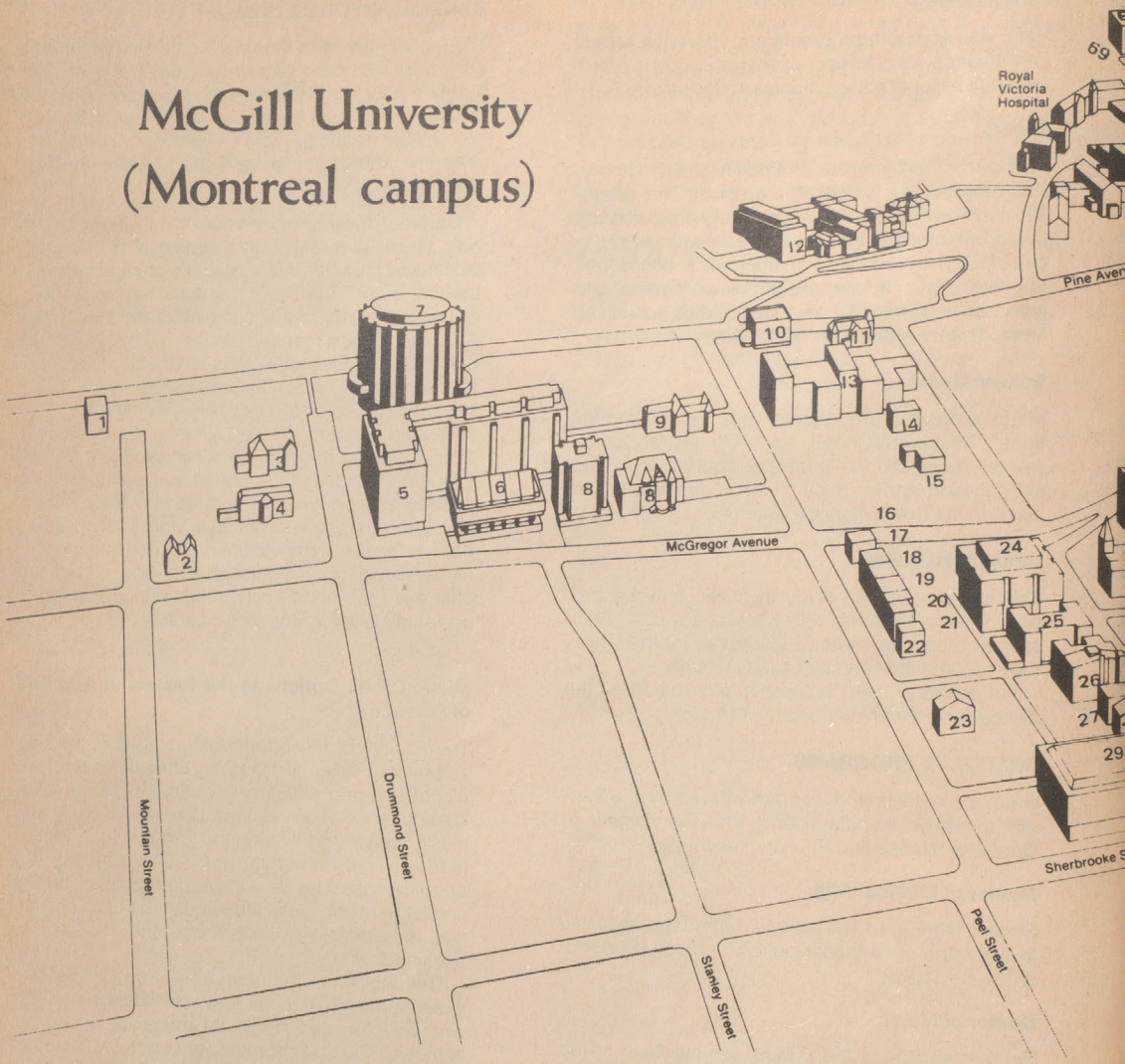
The courses in the other series are designed to meet the needs of those Arts and Science students who are interested in cultural and historical studies in music. The first course is introductory; the other courses cover Western Music from the Middle Ages to the present as well as the music of other cultures.

ADMISSION

Inquiries concerning admission to all undergraduate degree and diploma programs should be directed to the Dean of the Faculty of Music, Strathcona Music Building, 555 Sherbrooke St. West, Montreal H3A 1E3.

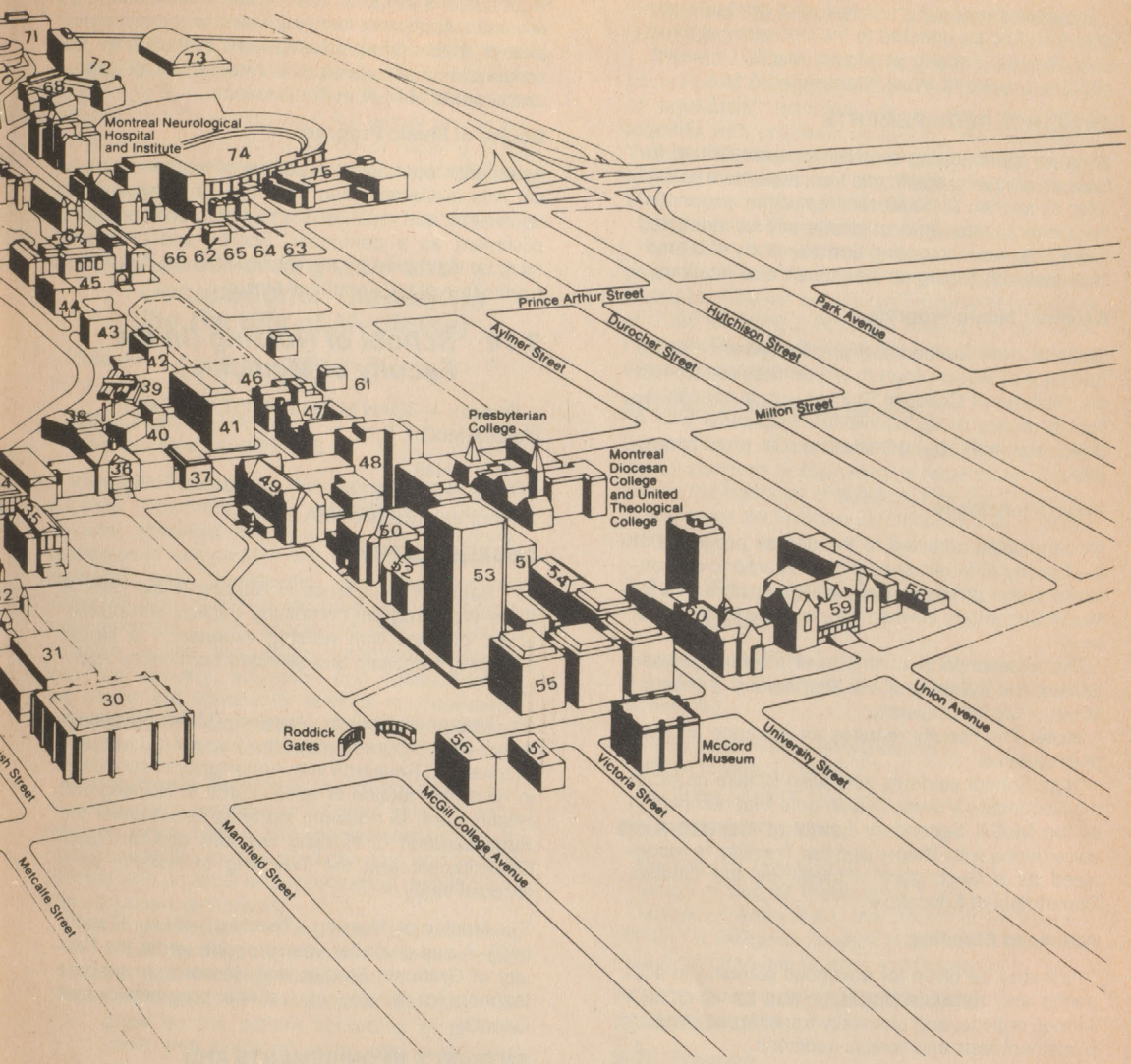
Application forms may be obtained from the Faculty of Music. Completed applications *must be returned to the Faculty of Music* before March 1 of the year in which the candidate hopes to gain admission. Late applications will be considered if space still remains for admission.

McGill University
(Montreal campus)



Numerical Key

1 Beatty Hall
2 Martlet House
3 Davis House
4 Hosmer House
5 Stewart Biological Sciences
6 Greenhouses
7 McIntyre Medical Sciences
8 Chancellor Day Hall
9 Mental Hygiene Institute
10 Purvis Hall
11 Duggan House
12 Allan Memorial Institute
13 Faculty of Education
14 Hugessen House
15 David Thomson House
16 3511 Peel Street
17 3495/91 Peel Street
18 3487 Peel Street
19 3483 Peel Street
20 3479 Peel Street
21 3475 Peel Street
22 3465 Peel Street
23 3437 Peel Street
24 University Centre
25 Peterson Hall
26 Faculty Club
27 3438 McTavish Street
28 3434 McTavish Street
29 Samuel Bronfman Bldg.
30 McLennan Library
31 Redpath Library
32 Redpath Hall
33 Morrice Hall
34 Stephen Leacock Bldg.
35 Redpath Museum
36 Arts Bldg.
37 Dawson Hall
38 840 McGregor
39 Old Greenhouse
40 Stationery Stores
41 F. Cyril James Bldg.
42 Foster Radiation Laboratory
43 Eaton Electronics Laboratory
44 Donner Bldg.
45 Strathcona Anatomy & Dentistry Bldg.
46 William & Henry Birks Bldg.
47 Wilson Hall
48 McConnell Engineering Bldg.
49 Macdonald Engineering Bldg.
50 Macdonald Chemistry Bldg.
51 Frank Dawson Adams Bldg.
52 Macdonald Physics Bldg.
53 Burnside Hall
54 Pulp & Paper Institute
55 Otto Maass Chemistry Bldg.
56 Strathcona Hall
57 762 Sherbrooke Street W.
58 Women's Athletics
59 Strathcona Music Bldg.
60 Royal Victoria College
61 3521 University Street
62 522 Pine Ave. W.
63 505 Pine Ave. W.
64 509 Pine Ave. W.
65 515/517 Pine Ave. W.
66 527 Pine Ave. W.
67 Pathology Bldg.
68 Douglas Hall
69 Gardner Hall
70 Bishop Mountain Hall
71 Molson Hall
72 McConnell Hall
73 McConnell Winter Stadium
74 Molson Stadium
75 Sir Arthur Currie Memorial Gymnasium



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Inquiries concerning admission to graduate programs should be directed to the Secretary of Graduate Studies, Faculty of Music, McGill University, 555 Sherbrooke St. West, Montreal H3A 1E3.

ENTRANCE REQUIREMENTS

Because the following requirements are written for Quebec students, applicants from elsewhere should refer to section 2. Students from other provinces, the United States and overseas will be accepted into a program comprising approximately 120 credits or less, depending on their music qualifications.

Bachelor Music Program

Students from Quebec applying for entrance to the Bachelor of Music program will be required to hold the Diploma of Collegial Studies with a concentration in music, or its equivalent. Applicants with a deficiency may be admitted on a probationary basis.

Piano Proficiency

All candidates admitted to the degree programs of the Faculty of Music should be prepared to demonstrate piano proficiency equivalent to the level of McGill Secondary III when they register for their first term.

For a description of this level in piano, please consult the syllabus of the *Preparatory School of Music of McGill University*.

Note: The Faculty requires an entrance audition of all students.

High School students who wish to take music at the Secondary V level, please note that completion of the McGill Secondary Levels in instrument or voice, along with Theory and Ear Training, is recognized as a Secondary V credit by the Quebec Department of Education.

Advanced Standing

Credit may be given for advanced standing in academic and music subjects on the basis of high school, college, and university transcripts as well as placement tests and special auditions.

Licentiate Program

A candidate must have completed secondary school and must sit an entrance audition as well as placement tests in theory and ear training.

Concert Diploma Program

In order to qualify for admission to the Concert Diploma program, the candidate must have the Licentiate diploma of the McGill Faculty of Music or its equivalent and must pass an audition in his chosen subject to satisfy the panel that he has the talent for a professional career as a concert performer.

Master of Musical Arts Program

Applicants must hold the Bachelor of Music degree with Honours in the appropriate area of specialization from this University, or its equivalent. Entrance examinations in Music Theory and History may be required. Applicants are requested to submit samples of their undergraduate work in their area of specialization. An audition is required of all applicants for the M.M.A. in Performance.

Doctor of Music Program

Applicants must hold the degree of Master of Musical Arts in Composition from this University or its equivalent, and must be of a high degree of accomplishment as a composer. Scores and/or tapes must be submitted by the applicant to the Graduate Committee of the Faculty of Music.

3.14 School of Nursing (in the Faculty of Medicine)

Director — JOAN M. GILCHRIST, B.N., M.Sc. (Appl.) (McG.), R.N.

Wilson Hall
3506 University St.
Montreal, Quebec H3A 2A7

DEGREES OFFERED

1) Bachelor of Science in Nursing (B.Sc. (N)). A three-year program combining general and professional courses with nursing experience in McGill Teaching Hospitals and selected community agencies.

2) Master of Science (Applied) (M.Sc. (Applied)). A two-year program under the Faculty of Graduate Studies and Research with opportunity to specialize in Nursing Practice or in Research in Nursing and Health Care. In addition, students select either the Administration of Nursing Services or Curriculum Development and the Teaching of Nursing as a focus of study.

3) Master of Nursing (Teaching) (M.N. (Teaching)). A one calendar year program under the Faculty of Graduate Studies and Research to prepare teachers for the new educational programs across Canada.

ENTRANCE REQUIREMENTS AND APPLICATIONS

1) Bachelor of Science in Nursing. Entrance requirements and application procedures are the same as those for the regular B.Sc. program. See entries in Admissions Sections. Introductory courses in psychology and sociology are added to the curriculum if these have not been taken as options in CEGEP.

Application forms may be obtained from the Admissions Office or the School of Nursing, and returned to:

The Admissions Office
McGill University
P.O. Box 6070, Station A
Montreal, Quebec H3C 3G1.

Acceptances will be made in January and April.

2) Master's Degrees. Applicants must have completed a baccalaureate program comparable to the B.N. or B.Sc.(N.) programs offered at McGill. Non-nurses holding a baccalaureate degree comparable to B.Sc. or B.A. programs offered at McGill may be admitted to a Qualifying year. For details please see the *Announcement of the School of Nursing or the Announcement of the Faculty of Graduate Studies and Research.*

3.15 School of Physical and Occupational Therapy (in the Faculty of Medicine)

Director — HELEN M. GAULT, Dip. Ed. P.T. (Eng.), B.Sc. (P.&O.T.) (McG.)

3654 Drummond Street
Montreal, Quebec H3G 1Y5

Physical Therapy is the art and science of physical treatment and rehabilitation utilizing physical, chemical, electrical and electromagnetic properties in conjunction with the manual skills of massage and therapeutic exercises for an individual who manifests physical and psychological disorders. The scope of the profession includes patient evaluation, treatment planning, treatment delivery, education and consultation in the clinics and community settings in cooperation with the medical and paramedical professions and the social agencies concerned.

Occupational Therapy is the art and science of directing man's response to selected activity for the purpose of promoting and maintaining health, to prevent disability, to evaluate behaviour and to treat patients with physical or psychological dysfunction. The occupational therapist

a) cooperates with other health professionals, social agencies and the patient, to determine the patient's overall treatment.
b) establishes the occupational therapy program for the patient according to precise short and long-term goals and supervises this program modifying it to the needs of the patient,
c) acts as a consultant in such matters as community health or architectural barriers,
d) takes part in fundamental and clinical research.

DEGREES OFFERED

Bachelor of Science in Physical Therapy B.Sc. (Phys. Ther.).
The full curriculum consists of three academic years from a college program in the health sciences or equivalent. Included during the three year program are courses in science together with professional training in physical therapy. Clinical experience is provided in the teaching hospitals of the Faculty of Medicine, McGill University, and other affiliated centres.

Bachelor of Science in Occupational Therapy B.Sc. (Occ. Ther.).
The full curriculum consists of three academic years from a college program in the health sciences or equivalent. Included are courses in science together with professional training in occupational therapy. Clinical experience is provided in the teaching hospitals of the Faculty of Medicine, McGill University, and other affiliated centres.

Master of Science (Applied) M.Sc. (Appl.).
Available in Physical Therapy. A two-year program under the Faculty of Graduate Studies and Research. The full curriculum consists of two years of study following a Bachelor of Science degree in Physical Therapy or equivalent plus two years of clinical experience.

ENTRANCE REQUIREMENTS

Completion of a Diploma of Collegial Studies in biological sciences or equivalent is required for admission to the Bachelor of Science in Physical Therapy or Bachelor of Science in Occupational Therapy programs.

3.16 Faculty of Religious Studies

Dean — JOSEPH C. McLELLAND, B.A. (McM.), M.A. (Tor.), B.D. (Knox), Ph.D. (Edin.), D.D. (Montr. Dioc. Coll.)

William and Henry Birks Building
3520 University Street
Montreal, Quebec H3A 2A7

DEGREES OFFERED

Bachelor of Theology (B.Th.)
Master of Sacred Theology (S.T.M.),
Master of Arts (M.A.) and Doctor of Philosophy (Ph.D), in Religious Studies (Granted through the Faculty of Graduate Studies and Research).

PERIOD OF STUDY AND ENTRANCE REQUIREMENTS

B.Th. Program

90 credits (three years) following Collegial diploma or equivalent; 60 credits (two years) following a Bachelor's degree or at least one full year of post-Collegial studies in Arts.

S.T.M. Program

Two years following a B.A. with major in religious studies or theology (second class standing) or one year after an approved B.Th. or M.Div. degree.

M.A. Program

Two years after an approved Bachelor's degree or equivalent.

Ph.D. Program

Two years after an approved Master's degree or equivalent.

For details, see the Faculty of Religious Studies Announcement.

3.17 Faculty of Science

Dean — E.J. STANSBURY, M.A., Ph.D. (Tor.)

DEGREE OFFERED

Bachelor of Science (B.Sc.)

PERIOD OF STUDY

The degree program normally requires three years of study after the Diploma of Collegial Studies. Acceleration may be possible in some cases as student progress is determined on a credit system.

ADMISSION

See Section 2.

STUDY PLANS

Three types of study plan are available: Faculty Programs, Major Programs and Honours Programs.

A Faculty Program is an approved coherent selection of courses giving the student a useful concentration in a recognized area. Three fifths of the student's course load in a Faculty Program is specified, the remaining courses being freely elected from those offered in the Faculties of Science and Arts.

Major programs are more specialized than Faculty programs and are usually centred around a specific discipline or department. Between three fifths and four fifths of the course load is specified in the program and the student is free to elect the remaining courses from among the offerings in the Faculties of Science and Arts.

Honours Programs require the student to maintain academic performance at a high standard in addition to involving a very high degree of specialization.

Faculty Programs are available in:

Anatomical Sciences
Biochemistry
Biogeography
Biology
Chemistry
Chemistry and Biological Sciences
Climatology
Dynamics of the Oceans and Atmosphere
Earth Physics
Geomorphology
Hydrology
Marine Geology
Mathematics and Biology
Mathematics and Chemistry
Mathematics, Chemistry and Physics
Mathematics and Physics
Mathematics and Psychology
Microbiology and Immunology
Paleobiology
Physiology
Psychology
Quaternary Studies

Major sequences are available in:

Anatomical Sciences
Biochemistry
Biology
Chemistry
Crystallography
Geography
Geological Sciences
Mathematics
Meteorology
Microbiology and Immunology
Physics
Physiology and Physics
Psychology
Solid Earth Geophysics

Honours sequences are availabe in:

Anatomical Sciences
Biochemistry
Biology
Chemistry
Crystallography
Geography
Geological Sciences
Mathematics
Meteorology
Microbiology and Immunology
Physics
Physiology
Psychology
Solid Earth Geophysics

Interdepartmental Honours Program in Immunology:

In conjunction with the Departments of Biochemistry, Microbiology and Immunology, and Physiology

TRANSFER STUDENTS

All students from other universities who wish to transfer credits to the Faculty of Science must apply in writing to:

The Admissions Office
McGill University
P.O. Box 6070, Station A
Montreal, Quebec H3C 3G1

3.18 School of Social Work (in the Faculty of Graduate Studies and Research)

Director — D. E. WOODSWORTH, B.A. (Tor.), M.A. (Mich.), Ph.D. (Brandeis)

3506 University Street
Montreal, Quebec H3A 2A7

DEGREES AND DIPLOMA OFFERED

In the Faculty of Arts:
Bachelor of Social Work (B.S.W.)

In the Faculty of Graduate Studies and Research:
Master of Social Work (M.S.W.)
Diploma in Advanced Social Work Practice

ENTRANCE REQUIREMENTS

The B.S.W.

Students are admitted to the three-year program in the Faculty of Arts after completion of a Diploma of Collegial Studies or equivalent on a competitive basis. Students with a Bachelor's degree with strong preparation in social and behavioural sciences may be admitted to a special B.S.W. program consisting of two summers plus a full academic year.

The M.S.W.

Students may be admitted to a one-year M.S.W. program upon completion of the B.S.W. with B standing.

The Diploma in Advanced Social Work Practice

This program is available to persons who hold a M.S.W. degree with high standing, and three years' experience in practice.

For details see the *Announcement of the School of Social Work.*

3.19 Summer Session

The 1976 Summer Session will consist of two parts: The Summer Session Part I, to be held from May 10 to June 18, and the Summer Session Part II, from July 5 to August 13. Each Session has in turn been divided into two terms in order to distinguish between full courses (6 credits) which will run the length of the six week session and half courses (3 credits) which will be held over a period of three weeks. Summer Session Part I — first term: May 10 — May 28, final examinations May 31. Summer Session Part I — second term: June 1 — June 18; final examinations June 21 Summer Session Part II — first term: July 5 — July 23; final examinations July 26. Summer Session Part II — second term: July 27 — August 13; final examinations August 16. Final examinations for full courses will be held on June 21 and August 16 respectively.

Students may register by mail up to one week before the start of courses or they may register in person on the first day of each session (i.e. May 10 or July 5). Registration in person will be in Redpath Hall from 10:00 a.m. to 3:00 p.m. and 4:00 p.m. to 7:00 p.m. on these two days.

McGill students wishing to attend the Summer Session Part I and/or Part II will be required to submit an authorization form signed by the Associate Dean of the Faculty in which they are currently registered, outlining the specific course(s) to be taken and indicating whether the course(s) is (are) part of the program they are pursuing.

Students from other Universities wishing to take a course(s) at McGill for credit at their own university may do so, provided they submit a letter of permission from the Registrar of their home University.

Acceptance into the Summer Session does not guarantee admission to McGill. Students wishing to apply to McGill for admission in September must do so before March 1.

Students admitted to McGill conditionally will be required to sign a Waiver releasing the University from the obligation to recognize the credits accumulated during the summer towards a degree. The signature of the Waiver in no way guarantees admission to McGill.

Students in possession of their final letter of acceptance will be required to submit an authorization form signed by the Associate Dean of the Faculty into which they have been admitted.

Please note that the French Summer School, The Accountancy Summer School and the Centre for Continuing Education will offer summer courses which are not administered by the Summer Session Office. Individuals interested in these specific programs, briefly listed below, should contact the respective offices concerned.

Full information concerning course offerings, applications, and requirements may be obtained from:

Summer Session Office
McGill University
P.O. Box 6070, Station A
Montreal, Quebec, Canada
H3C 3G1
(514) 392-6740

3.20 Summer Schools

ACCOUNTANCY SUMMER SCHOOL

The Faculty of Management (Accountancy) invites applications from students both from Montreal and elsewhere for the summer school. The full curriculum of 90 hours will be spread over three weeks with six hours of courses per day per five-day week.

Montreal students are not required to live on campus though they are encouraged to do so. Students may take individual courses instead of registering for the whole school.

The following courses will be taught by professors and professional accountants under the direction of Professor Ronald G. Laybourn of the Faculty of Management:

	Hours
Financial Accounting, Theory	5
Theory applied in Problems	15
Cost and Management Accounting, Theory and Problems	10
Modern Auditing and Analysis of Accounting Systems	10
Investigations and Reports	10
Principles of Management: Planning and Control	10
Computer Concepts*	5
Planning and Development of Computer Information Systems	10

*An *extra* Saturday session introducing Computer Concepts and Programming will be available for those who have had no previous instruction.

Full information may be obtained from:

The Accountancy Summer School
Faculty of Management, McGill University
Samuel Bronfman Building
1001 Sherbrooke Street, West
Montreal, Quebec
H3A 1X9

FRENCH SUMMER SCHOOL

The French Summer School, a residential school with an entirely French-speaking staff, was established in 1904 and held its fifty-ninth session in 1975. Courses are offered at two levels (undergraduate and graduate) in three divisions: undergraduate, graduate and M.A.

The program is designed for:

1) Undergraduates who have completed two years towards the B.A. degree with a major in French; students whose knowledge of French is considered satisfactory but who are not majoring in French may also be admitted (Division B).

2) Those having obtained a B.A. degree or its equivalent with sufficient background in the French Language who wish to take courses at the graduate level especially in Language and Civilization. (Division C)

3) Graduates who are presently working towards an M.A. or a Ph.D. at Universities other than McGill (Division C)

4) Teachers of French, at the Elementary or Secondary School, College or University level, who desire an effective "refresher" (Division B or C)

5) Graduates who wish to work towards an M.A. (with or without thesis) at McGill University by attending sessions at the French Summer School. (Division D)

6) Graduates who wish to work towards the M.Ed. (Teaching French as a Second Language) at McGill University, and taking the program organized jointly by the French Summer School and the Faculty of Education (Division D).

The courses carry credits towards McGill degrees; these credits are also transferable to other North American universities and colleges.

Extracurricular cultural and social activities play a major role in the program. These activities are supplemented by the rich and varied resources of French-speaking Montreal. The teaching staff lives in the same residences as the students and mingles freely with them. The exclusive use of French at all times, in and out of class, is absolutely compulsory.

For complete information concerning applications, admission requirements and detailed booklet, please write to:

The Secretary
French Summer School
McGill University
P.O. Box 6070, Station A
Montreal, Quebec H3C 3G1
(514) 392-4678

3.21 Centre for Continuing Education

Director — J.A. DUFF, M.A. (Cantab.), C.A.

Strathcona Hall
772 Sherbrooke St. W.
Montreal, Quebec H3A 1G1 392-5244

In addition to the instruction offered by faculties as part of their degree and diploma offerings, the University offers more than 300 evening courses through its Centre for Continuing Education in Montreal. These include the following:

COMMUNITY SERVICES

Occupational Preparation
Social Work

LANGUAGES

Certificate of Proficiency in English, French, German, Italian, Russian, Spanish, Translation in English and French.

Diploma in Translation of English and French.

Non-certificate courses in Arabic, Chinese, Croatoserbian, Modern Greek, Japanese, Portuguese.

LIBERAL ARTS — GENERAL

Communication Arts
Human Behaviour
Canadian Studies
Special Courses for Women

MANAGEMENT — GRADUATE LEVEL

Diploma in Management (MBA I)
Diploma in Management (Tourism)
Diploma of the Order of Chartered Accountants of Quebec (C.A.)

EDUCATION

Bachelor of Education (part-time)
Diploma in Special Education
Diploma in Reading
Certificate in Second Language Teaching
Teachers Certification Program

ENGINEERING

Certificate in Textile Technology
Certificate in Computer Languages
Various General Interest and Graduate Level courses.

MANAGEMENT — UNDERGRADUATE AND CERTIFICATE

Bachelor of Commerce (part-time)
McGill Certificates in Administration, Appraisal of

Real Estate, Banking, Business Communications, Insurance Brokerage, Marketing, Systems Design, Transportation.

Programs leading to certificates of the Administrative Management Society, the Appraisal Institute of Canada, the Association for Systems Management, the Canadian Credit Institute, the Canadian Institute of Management, the Canadian Institute of Travel Counsellors.

Programs for diplomas of the Canadian Public Relations Society, the International Association of Business Communicators, the Institute of Chartered Secretaries and Administrators, Corporation professionnelle des evaluateurs agréés du Québec, the Corporation of Industrial Accountants of Quebec, the Institute of Canadian Bankers, the Institute of Internal Auditors, and the Insurance Brokers Association of the Province of Quebec.

3.22 The Academic Year

Generally speaking McGill's academic year is made up of two sessions, the fall/winter or regular session and the summer session. These are subdivided, where appropriate, into the fall term (September to December), the winter term (January to May) and the two parts of the summer session (mid-May to end of June and early July to mid-August).

3.23 Credit System

Most faculties (exceptions: Graduate Studies and Research, Law, Medicine, Dentistry) use a credit system to determine student standing. While certain minor variations are described in the faculty announcements, the credit system is as set out here.

Graduate students do not have grade averages calculated and must achieve a grade of "B" or better for a course to be counted towards their degree.

Students in Medicine and Dentistry also do not have averages calculated. They are promoted on a year by year basis. The Faculty of Law calculates an Honours Point Average. Further details may be obtained in the respective faculty announcements.

In faculties using the credit system each course is assigned a credit rating reflecting the amount of effort it demands of the student. This will often represent the number of weekly contact hours the course requires. In general a three credit course indicates three hours of lectures (which may or may not include laboratory periods, conference, etc.) per week for one term.

In undergraduate faculties a minimum of 90 credits must be accumulated for a degree though some programs such as "Honours" programs may require a higher total.

The course promotion system is used to evaluate student progress. A grade point average (GPA) is calculated by multiplying the course credit value by the numeric value of the grade and dividing the sum of the grade points earned by the number of credits attempted.

Example	Credits Attempted	Grade		Numeric Value	Earned Grade Points
Course 1	6	A	=	4	24
Course 2	4	B	=	3	12
Course 3	3	C	=	2	6
Course 4	3	D	=	1	3
Course 5	3	F	=	0	0
Course 6	6	A	=	4	24
Course 7	6	B	=	3	18
	31				87

$$\text{Sessional GPA} = \frac{87}{31} = 2.81$$

Other letter grades and their impact on averages are explained in the next section.

Some Faculties such as Agriculture and Engineering calculate semestrial averages and assess student standing at the end of each semester. In these cases students will be given or denied permission to pursue their studies at the end of each semester.

A cumulative grade point average will be calculated comprising the student's entire record at McGill in a degree/diploma program.

Grades of A, B and C are deemed to be satisfactory passes, D a conditional pass and F a failure. Certain courses have been approved for Pass/Fail (P/F) grading. In almost all programs, required or prerequisite courses must be passed with C standing. Grades of D or F continue to be used in the calculation of the CGPA even after a subsequent mark is submitted.

Standing will be determined by the grade point average achieved by the student.

Satisfactory Standing

A student enters the University in satisfactory standing and remains in this standing unless his GPA for any year drops below 2.0.

Probationary Standing

A student whose GPA drops to between 1.5 and 1.99 (in some faculties between 1.2 and 1.99 for his entering year) is placed in probationary standing. A student in probationary standing must return to satisfactory standing within one year by obtaining a GPA of 2.5 or CGPA of 2.0, otherwise he will be placed in unsatisfactory standing.

Faculties impose a limit on the number of credits for which students in probationary standing may register. This is usually 12 credits per term.

Unsatisfactory Standing

A GPA of less than 1.5 (in some faculties 1.2 in the entering year) places a student in unsatisfactory standing.

Students in unsatisfactory standing must withdraw. They may be readmitted to probationary standing upon appeal to the faculty. Students in unsatisfactory standing for the second time will be required to withdraw permanently.

Cumulative grade point averages are restarted at zero when a student changes degree programs, e.g. B.Eng. to B.Com.

Degree Requirements

Holders of a Quebec Diploma of Collegial Studies must complete a total of 90 credits (i.e. have passed courses whose total credit value is 90) to be eligible for a degree, must have passed satisfactorily all courses required by their program, and have a CGPA at McGill of at least 2.0.

Out-of-Province students will have the minimum number of credits required for their degree indicated on their acceptance letter. To be eligible for a degree, they must in addition pass satisfactorily all courses required by their program, and have a CGPA at McGill of at least 2.0.

Transfer credits

In certain cases, credit may be granted for courses taken at other universities after a student's initial registration at McGill. Approval of the Dean or the Associate Dean is necessary and should generally be obtained in advance. Advanced standing for previous courses is described in the Admissions section.

Transfer credits are not calculated in the GPA or CGPA and the grades are not entered on the student's McGill transcript of record.

3.24 Definition of Letter Grades

All courses taken at McGill and all results obtained appear on the transcript of record.

The following is an explanation of the letter grades used (not all of these grades are used by every faculty):

A, B, C	Satisfactory Pass (See Credit System, Section 3.23)
D	Conditional Pass
F	Failure
P	Pass
J	Absent (Included as F in averages)
K	Incomplete (No average calculated if "K" on record)
KF	Incomplete Failed (Included as F in averages).
KK	Completion not required (Not counted in averages)
K*	Incomplete-extension granted (No average calculated)
L	Deferred (Not included in averages)
L*	Permitted to complete course (No average calculated)
W	Withdrew (Not included in averages)
WF	Withdrew failing (Not included in averages)
WL	Permitted to withdraw from a deferred examination (Not included in averages)
R	Pass at undergraduate level (Course credit in Music)
S	Satisfactory (Medicine only — no averages calculated)
U	Unsatisfactory (Medicine and Music only — no averages calculated)
Q	Course continued in next term
&&	Grade not yet available (No averages calculated)
——	No grade — student withdrew from the University

3.25 Student Categories and Course Loads

The following categories are used by all faculties except,
(1) Medicine and Dentistry, whose students must be full-time;
(2) Graduate Studies and Research whose categories are listed in that faculty's announcement.

Full-time students

In most faculties, full-time students in Satisfactory standing take a minimum of 12 credits per term.

Full-time students in Probationary standing take a maximum of 12 credits per term.

Part-time Students

Part-time students carry fewer than 12 credits per term.

Special Students

A special student takes regular credit courses, but is not working towards a degree. To qualify for this status in most faculties a student must hold an undergraduate degree and have a specific approved plan of study. Applications must be made at the Office of the Dean or Associate Dean.

Visiting Students

A visiting student is one who is taking courses at McGill for credit at another university. Applications must be made at the Office of the Dean or Associate Dean.

3.26 Course Numbering Guide

Course numbers consist of seven characters in the following format: 123-456A

The first three characters indicate the teaching unit responsible for offering a course. This is usually but not always a specific department. The following is a list of teaching unit codes currently in use:

FACULTY OF ARTS

History 101
Linguistics 104
Philosophy 107
Commmunications 109
English 110
African Studies 111
Classics 114
East Asian Studies 117
Art History 123
French 125
French as a Second Language 127
German 129
Italian 132
Jewish Studies 135
Russian and Slavic Studies 141
Hispanic Studies 144
Anthropology 151
Economics 154
French Canada Studies 157
Political Science 160
Sociology 166

FACULTY OF SCIENCE

Biology 177
Chemistry 180
Geography 183
Geology 186
Mathematics 189
Meteorology 195
Physics 198
Psychology 204
Marine Science 395
Parasitology 391

FACULTY OF MUSIC

Theory and Analysis 211
Ear Training 212
Composition 213
Music History and Literature 214
Performance Theory 215
Graduate Faculty Music Courses 219
Choral Techniques 221
Keyboard Skills 222
Instrumental Techniques 223
Violin 224
Viola 225
Cello 226
Bass 227
Guitar 228
Percussion 229
Flute 230
Oboe 231
Clarinet 232
Saxophone 233
Bassoon 234
French Horn 235
Trumpet 236
Trombone 237
Harp 238
Tuba 239
Jazz Studies 240
Conducting 241
Diction 242
Ensemble 243
Piano 250
Organ 251
Harpsichord 252
Voice 253

FACULTY OF RELIGIOUS STUDIES

Religious Studies 260
Islamic Studies 397

FACULTY OF MANAGEMENT

Accounting 271
Behavioural Science 272
Computer & Systems 273
Finance 274
Marketing 275
Management Policy 276
Operations Research II 277
Management 278
Industrial Relations 279
Management Core 280

FACULTY OF ENGINEERING

Faculty Course 300
Architecture 301
Chemical Engineering 302
Civil Engineering 303
Electrical Engineering 304
Mechanical Engineering 305
Mining and Metallurgical Engineering 306
Computer Science 308

FACULTY OF AGRICULTURE

Agriculture 330
Agricultural Chemistry 332
Agricultural Economics 334
Agricultural Engineering 336
Agricultural Physics 338
Agronomy 340
Animal Science 342
Biology 344
Botany 346
English 348
Zoology 349
Entomology 350
Extension Methods 352
French 354
History 355
Genetics 356
Horticulture 358
Mathematics 360
Microbiology 362
Physical Education 364
Plant Pathology 366
Psychology 368
Sociology 370
Soil Science 372
Woodlot Management 374
Research Development 375
Foods 376

Food and Consumer Sc. ... 377
Home Economics ... 378
Institutional Admin. ... 380
Consumer Services ... 381
Nutrition and dietetics ... 382
Communication Arts ... 384
Textiles and Clothing ... 386

FACULTY OF GRADUATE STUDIES AND RESEARCH

Air & Space Law ... 387
Comparative & Foreign Law ... 389
French Summer School ... 398
Biomedical Engineering ... 399
Interim Course Number ... 400
Human Communication Disorders ... 401
Arid Land Development ... 403
Library Science ... 405
Social Work ... 407
Urban Planning ... 409

FACULTY OF EDUCATION

Educational Administration ... 411
Counsellor Education ... 412
Social Foundations ... 413
Educational Psychology ... 414
Catholic Studies ... 415
Educational Research ... 416
Education Science (Mtl.) ... 417
Education in Home Economics ... 418
Education in Protestant Studies ... 421
Education in Jewish Studies ... 422
Education in Art ... 426
Education in English ... 427
Education in Maths ... 428
Education in Music ... 429
Education in Social Sciences ... 430
Education in Second Languages ... 431
Education Media ... 432
Elementary Education ... 433
Physical Education ... 434
Student Teaching ... 435
Technical and Vocational Education ... 436
Diploma Core Program ... 446
Bachelor of Education Core Program ... 448
Collegial ... 449

FACULTY OF LAW

Law ... 470-499 incl.

FACULTY OF MEDICINE

Anaesthesia ... 501
Anatomy & Histology ... 504
Biochemistry ... 507
Clinical Medicine ... 510
Elective ... 511
Epidemiology and Health ... 513
Experimental Medicine ... 516
Experimental Surgery ... 519
History of Medicine ... 522
Interdisciplinary Studies ... 524
Introduction to Clinical Sciences ... 525
Medicine ... 526
Microbiology and Immunology ... 528
Neurology and Neurosurgery ... 531
Obstetrics and Gynaecology ... 534
Ophthalmology ... 537
Options ... 538
Otolaryngology ... 540
Paediatrics ... 543
Pathology ... 546
Pharmacology and Therapeutics ... 549
Physiology ... 552
Psychiatry ... 555
Radiology (Diagnostic) ... 558
Radiology (Therapeutic) ... 561
Surgery ... 564
Urology ... 567

SCHOOL OF NURSING

Nursing ... 570
Nursing ... 572
Nursing-M.Sc. (App.) ... 573
Nursing-M.N. ... 574

SCHOOL OF PHYSICAL AND OCCUPATIONAL THERAPY

Occupational Therapy ... 580
Physical Therapy ... 581
Physical Therapy ... 583
Occupational Therapy ... 588

FACULTY OF DENTISTRY

Dentistry ... 590

CENTRE FOR CONTINUING EDUCATION

Accounting ... 600
Management Graduate ... 606
Tourism ... 608
Management Undergraduate ... 620
Mathematics ... 627
Occupational Preparation ... 640
Social Work ... 646
Nursing ... 648
Education ... 650
General Engineering ... 660
Textile ... 662
Computer Science ... 664
Communication Arts ... 670
Human Behaviour ... 672
Canadian Studies ... 674
Languages ... 680
Arabic ... 681
Chinese ... 682
English ... 684
French ... 686
German ... 688
Greek ... 690
Italian ... 692
Japanese ... 694
Russian ... 696

Spanish 697
Translation 698
Liberal Arts 700
Agriculture 800

The fourth character indicates the level of the course according to the following scheme:

D Diploma courses at the collegial level
E Collegial level courses
1—4 Years in Medicine, Dentistry, Law. For others, 2 through 4 refer to courses usually taken at the undergraduate university level.
5 Post degree diploma courses plus courses taken by both graduates and undergraduates
6 Master's level
7 Doctoral level
U Non-credit

The fifth and sixth characters are used to enumerate courses taught by the same teaching unit and at the same level. The numbers may also be used to indicate other information such as which courses are for honours students, which for majors or for areas of teaching within a teaching unit.

The last character indicates when and by whom a course is given. The following list indicates, in sequence, the terms during which a course is offered and refers to courses given **during the day and/or evening.**

A Fall term
B Winter term
D Fall and Winter terms
X Fall term (Continuing Education)
Y Winter term (Continuing Education)
Z Fall and Winter terms (Continuing Education)
L Summer session part I.
C Summer session part II.
U Summer session (Continuing Education)
F Summer and Fall terms
H Fall and Winter terms and summer session
E Winter term and summer session
J Winter term, summer session and the following Fall term
K Summer session, and the following Fall and Winter terms

3.27 Course Changes

Students wishing to make changes to the courses for which they are registered (dropping a course, adding a course) must do so through their faculty's student records office.

3.28 Withdrawal from Course

Withdrawal from a course after the change of course period will be allowed by the Dean or the Associate Dean up to the date specified in the faculty announcement. Students who have not officially withdrawn from courses they are no longer attending will have a failing grade recorded at the end of the session.

3.29 Withdrawal from the University

The responsibility for initiating withdrawals rests solely with the student. Neither notification of the course instructors nor discontinuance of class attendance will suffice. A student who wishes to withdraw officially from the University during the academic year must secure permission from the Office of the Dean or the Associate Dean. The appropriate form will be supplied. A student considering withdrawal is strongly urged to consult his Academic Adviser before making a final decision. Tuition fees for the term in which the student withdraws are refundable according to the regulations set out in the fees section. The student ID card must be attached to the withdrawal form.

3.30 Examinations

Students may write term papers and their answers to examinations in English or French, except in the case of certain language and literature courses.

Class Tests

Members of the teaching staff may from time to time give interim class tests if they think them necessary.

Final Examinations

Final examinations are held during an examination period following the term in which the course is given. In some courses there is no final examination; standing in these courses is determined on the basis of term work and class tests.

Supplemental examinations

There is a supplemental examination period during the month of August. A student may receive permission to write supplemental examinations in courses in which he obtained a D or an F. It should be noted that supplemental examinations are not necessarily available in all courses. It is the student's responsibility to determine this by checking with the instructor, and to avail himself of this privilege at the time of the next supplemental examination period. His supplemental result will not erase the D or F originally obtained which was used in calculating his GPA. Both the original mark and the supplemental result will be calculated in the CGPA (i.e. the taking of a supplemental examination has the same effect on a student's GPA as does repeating the course). Written application to write a supplemental examination must be received at the Dean's or Associate Dean's Office. Special permission is required if a student wishes to write supplementals totalling more than 6 credits. A fee of $10.00 for each supplemental paper is payable to the Cashier as soon as the application has been approved. A student who does not intend to write the supplemental for which he is registered should officially

withdraw, otherwise a grade of "J" (Absent) will be recorded ("J" counts as an F in CGPA calculations).

In certain cases, a student may be permitted to write one supplemental examination during the April-May examination period in a first term course in which he has obtained a D or an F, if the course is also given in the second term. No attempt is made to avoid conflict between this supplemental and the student's required final examinations, and in the case of such a timetable conflict the student will be required to write the final examination and postpone the supplemental to the August period.

Depending on the course, the supplemental result may or may not include the same proportion of class work as did the original grade. The instructor will announce the arrangements to be used for his course early in the term.

Deferred Examinations

A student who, for reasons such as illness or family affliction, has been unable to write one or more examinations, may receive permission to write deferred examinations in their stead which will normally be written in the next supplemental examination period. The Dean's or Associate Dean's office must be informed within one week of the examination of the reasons for absences. An "L" will appear on the Report of Standing in place of a grade in such courses, and will be replaced by the grade obtained in the deferred examination after it has been written.

Reassessment of a Grade

If a student wishes his marks checked or his examination paper re-read, he should apply in writing to the Office of the Dean or Associate Dean.

Any request to have a term paper reassessed must be made directly to the professor concerned.

Credit by Examination

In certain cases a student may apply to write the final examination in order to obtain credit in a course for which he has not registered (this is possible only in those courses where there is no other assessment than the final examination).

Special Facilities

Students with visual or other disabilities should consult the office of the Associate Dean about the possibility of special examination facilities.

3.31 Incomplete Courses

If, in the instructor's opinion, there is sufficient reason to permit a delay in the submission of required term work, an extension of deadline of up to four months after the end of the course may be granted the student. In this case, the instructor will submit a grade of "K" (incomplete). If a new grade is submitted within the deadline by the instructor, this will appear on the student's Faculty reports and verification forms following the K and will replace the K on the student's official transcript.

If the required work is not completed before the deadline the grade of KF will be recorded in the same way as the grade above. (KF denotes a failed course and has the same effect on the GPA as an F.)

In exceptional circumstances, and with the approval of the Associate Dean, the four month deadline may be extended further, in which case the grade of K* will appear.

A student who has not, without accepted excuse, participated or written the final examination in a course for which he has registered may be given a grade of J (absent).

3.32 Academic Credit Transfer Agreement

Regular full-time undergraduate students (first cycle*) and regular full-time or part-time graduate students (second and third cycles**) registered at McGill may, with the written permission of the Dean of their Faculty, register for up to 40% of a full course load in each academic year at any university in the province of Quebec. These courses, weighted, graded, and successfully completed according to the standards of the university giving the courses, will be fully recognized by McGill for the purpose of the degree for which the student is registered.

This privilege will not be granted automatically; the courses should form a required part of the student's program and be unavailable at McGill.

Students wishing to take advantage of this agreement should consult their Associate Dean for details, and are informed that this agreement is subject to the following conditions:

i) that the other universities concerned may, at their discretion, refuse the registration of a student for any of its courses;

ii) that the obligation of the student to follow the curriculum laid down by McGill is not affected;

iii) that the student is responsible for ensuring his timetable at McGill permits him to take courses at any of the other universities concerned;

iv) that the universities concerned are not responsible for special arrangements in cases of examination timetable conflicts.

Students may take advantage of this agreement by completing the TRANSFER CREDIT form available from the Registrar's Office. This form permits the student to collect the required academic authorizations and that of the Director of Finance; ensures automatic fee transferral from the home university to the host university; and ensures the automatic reporting of marks and credits to the home university.

*(i.e. Bachelor degrees in architecture, arts, law, commerce, education, engineering, music, nursing,

occupational and physical therapy, science, agriculture, food science, and theology).

**(i.e. master's or doctoral degrees).

4 FEES

The University reserves the right to make changes without notice in the published scale of fees.

Fees are not refundable, except under special conditions. See "Regulations Concerning Withdrawal" below.

4.1 *University Fees*

Tuition fees are based on a per credit charge of $19 per credit and this fee includes all the regular charges of the University for registration, tuition, laboratories and libraries. In addition, Student Services fees of $70 and Students' Societies fees of from $25-$49 are separately assessed for all students taking 24 or more credits and must be paid at the same time as the tuition fees. A normal academic load of 30 credits would be $570 in tuition fees ($19 x 30) plus fees for Student Services and Students' Societies. The faculties of Medicine, Dentistry and Graduate Studies and Research are not presently on the credit system and their tuition fees are listed separately below.

FULL TIME STUDENTS (Degree Candidates)

Credit System Faculties and Schools

$19.00 per credit plus $70.00 Student Services, and Students' Societies fees as follows:

	Students' Societies
Agriculture (including Food Science)	$34
Arts — B.A.	28
B.S.W.	30
Education [1]	28
Engineering ($49 for Architecture)	35
Law [2]	40
Management	33
Music [3]	27
Nursing — B.Sc. (N)	33
B.N. [4]	32.50
Physical and Occupational Therapy	26
Religious Studies (candidates for ordination are exempted from tuition fees)	25
Science	28

Other Faculties and Schools

Dentistry: Tuition fees of $570.00 plus Student Services of $70.00, Students' Societies fees of $26.50 (including Dental Review) and rental of laboratory and clinical equipment as follows:

1st year:	100.00
2nd year:	175.00
3rd year:	225.00
4th year:	225.00

Medicine: Tuition fees of $719.00 plus Student Services of $70.00 and Students' Societies fees of $25.00.

Graduate Studies:	*Tuition*	*Student Services*	*Students' Societies* [6]
1st year Master's	$570.00	$70.00	$29.50 [5]
2nd year Master's	285.00	35.00	29.50 [5]
Beyond 2nd year Master's	40.00	35.00	29.50 [5]
1st to 3rd year Doctorate	570.00	70.00	29.50
Beyond 3rd year Doctorate	40.00	35.00	29.50

The Graduate Studies Announcement should be consulted for further information.

[1] Students in one year Diploma or Certificate programs are not assessed on the credit system but will be charged tuition fees of $570.00.
[2] Includes $6.00 for Law Journal and $12.00 for course materials.
[3] Students electing further courses in individual practical instruction above the requirements of the program will be charged an additional $420.00 per year of $210.00 per term.
[4] Fees not assessed per credit. Standard tuition fee of $570.00 will be charged.
[5] Students in M.S.W. program pay $31.50 Students' Societies fees.
[6] All students in the Faculty of Graduate Studies and Research except those registered as "non-resident" or "additional session students who have chosen not to obtain valid I.D. cards are charged the Student Services and Students' Societies fees.

PART TIME, SPECIAL AND VISITING STUDENTS

Where the credit system is applicable, $19.00 per credit will be assessed. Otherwise the charge will be $114.00 per full course and $57.00 per half course.

In addition, the following fees will be assessed per term:

a) If taking 9 credits and over:
Student Services $35.00
Students' Societies $14.00
(average fee, actual varies by Faculty)

b) If taking more than 5 but less than 9 credits:
Student Services $20.00*
Students' Societies ..... $ 5.00

c) If taking 5 credits or less:
Student Services $10.00*
Students' Societies..... $ 5.00

SPECIAL FEES AND PENALTIES

**Application for Admission	$15.00
Late Registration	25.00
Late payment fee (after specified date):	
1st 30 days	10.00
After 30 days	25.00
***Graduation Fee	10.00
Duplicate Student Identity Card	5.00
Duplicate diploma	10.00
Certified transcript of student's record:	
First two copies each	1.00
Additional copies made at the same time, each	.25
Re-reading examination paper	10.00
Supplemental examinations, each paper	10.00
Changes in course (Arts, Science, B.Com.) each change after specified change of course period	5.00

***Excludes Athletics: At the discretion of the Director of Athletics, a student may participate in the Athletics program upon payment of an additional $30.00.**

****Students already at McGill who are making application to a professional faculty or to the Faculty of Graduate Studies and Research are not required to pay this fee.**

*****Graduation fee: Applications by students who expect to graduate at the Spring Convocation must be filed by April 1st of each year and by those who expect to graduate at the Fall Convocation by September 1st of each year. An application form will be mailed to each eligible student and must be returned to the Registrar's Office together with the graduation fee of $10.00 by the appropriate date listed above. This fee will cover all expenses in connection with graduation including academic dress. It is the student's responsibility to inform the appropriate faculty or school that he or she expects to graduate in order to ensure that his or her name is included in the graduation list.**

4.2 Regulations for Payment of Fees

NEW STUDENTS

Students entering the University for the first time and those returning in Graduate Studies are required to pay their fees for the term in which they are registered either by mail or in person at the Accounting Office within 10 days after registration. For students registering in September the second instalment is due before January 15, 1977.

RETURNING STUDENTS

Returning students from the previous year (except in Graduate Studies) must pay one half of the total required fee by mail or in person to the Accounting Office before August 23, 1976, otherwise they will not be permitted to register. Instructions for paying fees in advance will be mailed to all returning students, either with their Sessional Reports of Standing or a short time later. Students who have been notified by the University of the award of a scholarship, bursary or student loan, and who require this award for payment of the first instalment of fees, must obtain permission to delay payment of fees from the Student Aid Office.

The second instalment is due by January 15, 1977. A late payment fee as stated above is charged for payment after this date.

LATE REGISTRATION

Students registering late must pay their fees at the time of registration.

As soon as possible after the prescribed dates for the payment of fees the Chief Accountant will send to the Registrar's Office a list of the registered students who have not paid their fees. Reports of Standing, transcripts of records and diplomas will be withheld until such time as the fees are paid or a satisfactory arrangement is made with the Chief Accountant.

4.3 Regulations Concerning Withdrawal

A student who wishes to withdraw from the University or from certain courses must secure the permission of the Dean or Associate Dean of his or her Faculty. The Office of the Associate Dean will supply the necessary form which must be completed and submitted. Students withdrawing from all their courses must attach their Student Identity Card to the withdrawal form. A student considering withdrawal is strongly advised to consult the Dean or Associate Dean before making a final decision.

Tuition fees for the term in which the student withdraws are refundable as shown below and apply to *individual course* withdrawal as well as to *complete* withdrawal from the University. The effective date for refunds will be the date on which the official withdrawal form was completed. Dates of notification of the course instructors or of discontinuance of class attendance will not suffice.

Student Services and Students' Societies fees are not refundable after October 15 for the Fall term and after February 18 for the Winter term.

Fall Term	Refunds
Up to October 15	100% (Minimum charge of $50 in the case of complete withdrawal)

October 16 — 31	50%
November 1 — 19	25%
After November 19	No refund

Winter Term

Up to February 18	100% (Minimum charge of $50 in the case of complete withdrawal)
February 19 — 28	50%
March 1 — 18	25%
After March 18	No refund

4.4 Room and Board Charges in University Residences

The rates for the regular session (8 September to 1 May) in 1975-76 were $1820 for single room and all meals (Royal Victoria College only) and $1638 for room and five-day meal plan (Co-Ed Residences only). Students in faculties with longer school years paid proportionally more. Residents are not accepted on a room-only basis. Fees for a limited number of double rooms were approximately $100 less than those quoted above.

On weekends and holidays individual meals for residents were priced as follows:

Breakfast..... $1.50
Lunch..... $2.25
Dinner..... $2.75

These rates did not include meals during a 16-day period at Christmas, nor did the rate for the 5-day meal plan include meals on certain holidays like Thanksgiving, Mid-Term, Easter, etc. Students may, however, occupy their rooms free of charge during the Christmas holiday period.

The residence fees for the 1976-77 session have not been set by the time this Announcement went into print. A correct fee sheet will be sent with the residence contract when an offer of accommodation is made. New rates, if required, will be calculated from those of the 1975-76 session plus inflation.

OTHER REGULATIONS

Students accepted for residence must pay a security deposit of $50.00. If a student does not remain in residence the full academic year, the deposit is not returned unless written notification is received before June first or unless the examination results do not permit registration. The deposit is returned by mail in late spring to those who stayed the full academic session. Deductions, however, are made for wanton damages to the premises by the resident or by anyone when the particular individual responsible cannot be determined.

PAYMENT OF FEES

Entering or transfer students: Fees may be paid in two instalments — the first within ten days after registration, and the second before January 15.

Returning students: First instalment must be paid August 23 and the second before January 15.

The sessional fees include a house fee of $10.00 collected by the University on behalf of the Residents' Council of each hall, and a $5.00 key deposit which is refunded at the end of the session, and at the Co-Ed Residences a $3.00 Inter-Residence Council fee.

5 RESIDENTIAL FACILITIES

5.1 Types of Residences

McGill offers two types of residence accommodation:

1. Royal Victoria College houses undergraduate women.
2. Co-Educational Residences, consisting of Douglas, Gardner, McConnell and Molson Halls, each of which houses both men and women, undergraduates and graduates.

LOCATION

The Co-educational Residences are located on the wooded slopes of Mount Royal, adjacent to the University playing fields. They are approximately two blocks away from the main campus, and a ten-minute walk from the centre of downtown Montreal.

Royal Victoria College is on campus close to the major shopping and cultural areas of the city. Bus and subway stops are nearby.

ACADEMIC STAFF

The academic staff of each hall consists of a Residence Director or Warden, Assistant Directors, and Residence Fellows or Dons. One of the main functions of the academic staff is to get to know students individually and, if a student requests it, to give advice on personal or academic matters.

ROOMS AND FACILITIES

Except for a few double rooms, all rooms are for single occupancy and in each, besides a bed, there is a desk, chair, chest of drawers and closet. Linen and towels are supplied at Royal Victoria College only and are exchanged weekly. In all halls residents are expected to make their own beds and keep their rooms in order. Each hall has coin-operated automatic washers and dryers, as well as ironing facilities; an outside dry cleaning firm also calls regularly at the residences. Telephones located on each floor are operated through hall switchboards; in addition, each room is wired for a private telephone. There is storage space for ski equipment, trunks, and suitcases in every hall. Limited parking space is available in the co-ed complex only.

The halls have TV, music, sewing, and stereo rooms, and a well-stocked library of magazines, books and newspapers. The co-ed residences have

calculating and typing rooms, a sauna and universal gym; R.V.C. has the use of a swimming pool located within the building.

MEAL SERVICE

Residents at Molson, McConnell and Gardner halls take their meals together in a large centrally located dining hall. Douglas Hall and the Royal Victoria College have their own dining rooms. Students at Royal Victoria College have a 19 meals a week plan while the Co-Ed Residences have a 15 meals or five day meal plan. Bag lunches are available. There are kitchenettes on every wing of the co-ed residences where residents may keep food and prepare hot or cold snacks at any time. In addition vending machines in every hall dispense soft drinks, sweets and pastries. Students in the co-ed residences can rent small refrigerators for their rooms.

DIETS

Limitations of facilities do not permit catering for special religious diets in the dining halls, although the kitchens will seek to meet special needs whenever possible. Temporary diets because of sickness may be prepared on doctors' orders.

HEALTH

In case of illness residents are usually referred to the University Health Service nearby. However, there is a nurse on duty every day in the residence dispensary or infirmary, and, at the Co-Ed Residences, live-in nurses who keep evening office hours and who are also available for emergency treatment any time.

GOVERNMENT

Each hall has a Residents' Council, elected yearly by the residents at a designated time during the academic year. It is the job of Council to gather hall opinions, set policy, supervise financial affairs, and organize sporting and recreational activities within the residences.

Guidelines

McGill's residences are run for the convenience and advantage of the students living in them. What "rules and regulations" do exist are decided upon and administered by the students themselves. Basically, living together in any community requires just a single rule: respect for the rights of others. In each hall there is a House Committee which is elected from the student body at the beginning of each year to deal with any problems that may arise.

APPLICATION AND ADMISSIONS

Please note that the procedure governing residence admissions is entirely separate from that of University admissions. Application forms for both the Royal Victoria College and the Co-ed Residences are mailed out with all academic application forms. Residence application forms accompanied by an application fee of $5.00 should be returned to the appropriate address below at the same time as the application for admission to McGill and in no case later than May 1:

Residence Manager
Royal Victoria College
3425 University Street
Montreal, Quebec H3A 2A8

The Secretary
Co-ed Residences, McGill University
3935 University Street
Montreal, Quebec H3A 2B4

The University is able to house in residence only a small fraction of its students. Because of the growing popularity of residence living, only a few hundred rooms become vacant each year. It is imperative, therefore, that students seeking residence accommodation apply early and fill out the residence application thoughtfully. The deadline for applications is May 1. All late applications are automatically placed on a waiting list and not considered until late August.

Among the applications that arrive on time, final selections are made with the following factors in mind: age, course of study, national origin, and interests as given on the application form.

ROOM AND BOARD CHARGES

(See Section 4.4)

PARKING ON UNIVERSITY GROUNDS

The University does not permit students to park automobiles or motorcycles on the Montreal campus. Limited parking at monthly rates is available for students living in residences.

OFF-CAMPUS HOUSING SERVICE

Students unable to secure a room in residence should get in touch with the
Off-Campus Housing Service
Dean of Students' Office
3465 Peel Street
Montreal, Quebec H3A 1W7

This office maintains an up-to-date computer listing of available off-campus housing, including the names of families willing to take in student boarders and other students seeking roommates.

Students living off-campus may purchase a meal card entitling them to eat regularly at the Co-ed Residences. Individual meals can be purchased both at the Co-Ed Residences and at the Royal Victoria College by both men and women students living off-campus.

UNIVERSITY HOUSING FOR MARRIED STUDENTS

The University maintains a limited number of apartment units in several nearby locations for married students. As the demand for these apartments greatly exceeds the number of vacancies occurring each year, applications are restricted to married,

full-time undergraduate students and graduate students who have not yet attained the Ph.D. or M.D. degree or equivalent. Further information and application forms may be obtained from the Real Estate Office, Apt. P.1, 3474 Hutchison St., Montreal, Que., H2X 2G7.

6 STUDENT SERVICES

6.1 Office of the Dean of Students

The Dean of Students has the responsibility for the provision of and the coordination of all student services and works closely with the Students' Society in the interests of all students. The Dean, and Associate Dean are available for consultation with individual students who may wish to discuss problems not already provided for by one or other of the existing services or other agencies on campus. The Office of the Dean of Students maintains an "open-door" policy and students are invited to make use of these services at any time.

Location: ..... 3465 Peel St.
General Information: 392-5364

6.2 Orientation Service

The Orientation Service is a pre-registration counselling service designed to assist incoming students in selecting their courses and to introduce new students to the various aspects of the University. The service operates from Monday to Friday, 9:00 a.m. to 4:00 p.m., from August 16 until September 3.

The objectives of the program are: to provide information and advice on courses and programs of study according to the students' vocational expectations, interest, ability and aptitude; to acquaint students with the many services available at McGill and to encourage their use; to tell students about registration procedures and offer suggestions which might facilitate the process; to provide the kind of information new students need to resolve academic and other problems (i.e. change of course, etc.); to familiarize students with the geography of the campus, and to introduce them to the libraries; to provide the opportunity for incoming students to meet individual members of the academic staff in an informal and friendly atmosphere.

Incoming students are invited to participate in a one-day orientation session consisting of the following:

A group meeting in the morning to discuss registration procedures, student services, the program for the day and questions of a general nature.

McGill students conduct campus tours in the morning and in the afternoon. The staff of both the Redpath and McLennan libraries provide an introduction to the libraries.

A Social Hour is held daily between 3:00 and 4:00 p.m. Academic staff and representatives of Student Services drop in to enjoy a cup of coffee and chat with the students. The students in turn are given the opportunity to learn more about the University and discuss programs on a friendly basis.

6.3 Academic Counselling in the Faculties

(See Faculty Announcements)

6.4 Athletics

McGill's facilities for athletics, physical education, and recreation are centred in the Sir Arthur Currie Memorial Gymnasium, the Percival Molson Memorial Stadium and the McGill Winter Stadium. Sports facilities in the gymnasium include basketball, squash, badminton, and volleyball courts; swimming pool; facilities for gymnastics, wrestling, fencing, judo, and track. For the use of all women students of the University, staff and graduates, the Garfield Weston Swimming Pool is available.

The physical education programs for men and women provide instruction for students in various sports.

Numerous intramural and recreational sports clubs provide opportunities for students to participate in sports for relaxation and to represent their faculty or residence on intramural teams of their choice.

On the intercollegiate level McGill participates in sports sponsored by the Quebec Universities Athletics Association and the Ontario Women's Intercollegiate Athletics Association.

Complete information concerning the McGill athletics facilities and intercollegiate, intramural, and recreational sports programs may be obtained from the Athletics Office in the Currie Gymnasium.

See also "Health Service" below.

6.5 Chaplaincy Service

A counselling service is available through the campus chaplains independent of McGill administration. This service exists to serve the needs of all McGill students, families and staff through individual counsel or group encounter. The service is related to areas such as problems of faith, pre-marriage counselling, marital problems, divorce, value systems and personal relations. Open meetings on a variety of religious and campus topics are regularly sponsored by the Chaplains. Social Service projects are sponsored in conjunction with Hillel, Newman and S.C.M. Yellow Door and opportunities are offered to work with the poor, aged, children and prisoners.

At 3484 Peel Street there is a lounge and reading area where books and periodicals are available to

students free of charge. Information concerning individual denominational services is available.

Location: ..... 3484 Peel St.
General Information: ..... 392-5890 or 288-1806

6.6 Student Aid & Foreign Student Advisor's Office

The Student Aid section of this office handles all matters relating to financial assitance whether University, Provincial or Federal. Non-Canadian students requiring certification of registration and/or letters of advice to Foreign Exchange Control Boards obtain these from this office.

The Foreign Student Advisor section of this office deals with all matters which may affect non-Canadian students such as problems with the Canadian Department of Manpower and Immigration and information concerning the necessity of the compulsory health insurance.

Location: ..... 3465 Peel St.
General Information: 392-5256

6.7 Student Counselling Service

The Service provides a place where students of all faculties may discuss any problem confidentially. Among the services offered are individual and group therapy, awareness groups, human relations training, marital and sexual therapy, psychological assessment, vocational testing, effective reading courses, educational and career planning and the Educational and Career Information Library. The service is free to the McGill Community.

Location: ..... 522 Pine Ave. W.
General Information and Appointments: 392-5119

6.8 Health Service

When students enrol at McGill University they have available to them a full range of medical service provided by the McGill University Health Service. Medical clinics operate daily, five days of the week from 9:00 a.m.-5:00 p.m. A physician is always on call at night and on weekends and he can be contacted by dialing the Health Service number. There are both male and female physicians on staff as well as a competent staff of college health nurses.

This service is available to all full-time students, undergraduate and post-graduate. Students are asked to bring their Medicare cards or equivalent. *All information is completely confidential and forms no part of any University record.*

Many students are seen for discussion about sexual life, contraception, drug problems and venereal disease. We urge students who suspect that they have V.D. to consult us. We invite students who are concerned about a drug problem to contact the Health Service and most particularly the Mental Health Section.

Part of the Health Service consists of a *Mental Health Service* which makes available to students psychiatric and psychological help. Students who wish to come are advised to make an appointment. If a psychological emergency arises the student should come directly to the Mental Health Service or phone immediately. All contacts by students with their service are kept completely confidential.

PARTICIPATION IN ATHLETICS: A student in any academic year wishing to participate in heavy contact athletics, e.g. football, will be required by the Athletics Department to undergo a physical examination at the University Health Service.

In order to ensure medical coverage while a student at McGill, Canadian students from provinces other than Quebec are advised to consult with the medicare and hospital insurance offices of their own province before coming to McGill. This is particularly important since residents of other provinces are not covered by Quebec Medicare and Hospitalization while studying at McGill.

Non-Canadian students, whether undergraduate or postgraduate, are obliged to enrol in a medical and hospital insurance program. Consequently, the student and his dependents are covered to a large extent for medical and hospital expenses during the academic year. Information concerning this program can also be obtained at the general office of the Health Service.

Location: **517 Pine Avenue West**
Appointment and General Office 392-5441
Mental Health Section..... 392-5449

6.9 Off-Campus Housing Service

Available to all McGill students, this service operates on a year-round basis. Up-to-date listings of various types of accommodation in the downtown area and residential areas on bus and metro routes are maintained with the use of McGill computers. Students wishing to make use of the service are asked to apply in person.

Location: ..... Room 401, 3465 Peel St.
General Information: 392-4554

6.10 Tutorial Service

The Tutorial Service operates during the fall and spring terms. Students may be tutored by senior honours and graduate students specializing in the majority of fields within the Faculties. Sessions are approximately one hour in length and normally two or three students are tutored at each session. The cost to the student is minimal and depends on the number of students in the group.

Location: ..... Royal Victoria College, 3425 University Street.
General Information: 392-6741

6.11 Student Placement

The Canada Manpower Centre provides a comprehensive placement service to McGill students in the areas of part-time, summer and permanent employment. The principal aims of the service are to encourage employers to make available a wide variety of job opportunities to McGill students; to assist students in finding suitable employment, by providing information on the labour market and arranging interviews with prospective employers; to encourage students to prepare for a career by doing their own research into the labour market, through library facilities, seminars, summer and part-time jobs.

Location: ..... 762 Sherbrooke St. W.
General Information: 283-4411

6.12 Additional Services

BOOKSTORE

The McGill University Bookstore, located in the Bronfman Building at 1001 Sherbrooke Street, West, provides a comprehensive stock of current textbooks, reference material and academic supplies as well as items of general interest. It is administered by a Senate committee representing the students, the faculty and the administration.

EXTRA-CURRICULAR ACTIVITIES

There are over 250 activities and clubs which students may join. These include international clubs, religious groups, political clubs, fraternities, communications (Radio McGill) and some 50 miscellaneous groups (such as science clubs, literary, theatrical and musical societies, chess and bridge clubs, and the Voyageurs' Society).

STUDENT ORCHESTRA, CHOIR, AND WIND ENSEMBLE

The Student Orchestra and Choir of the Faculty of Music as well as the McGill Wind Ensemble have some vacancies for amateur musicians. Advanced instrumentalists (strings, winds, harp, percussion), or experienced choir singers who would like to become regular members of the Orchestra, the Choir, or the Wind Ensemble, should contact the office of the Faculty of Music for further information (Telephone 392-4501).

7 SCHOLARSHIPS AND FINANCIAL AID

ENTRANCE SCHOLARSHIPS

In general the University's system of entrance scholarships is designed to enable good students from all parts of Canada to attend McGill. The policy of the University is to recognize and honour scholarship, and the University Scholarships Committee selects scholarship winners from among those students who have obtained or who expect to obtain *a first class academic standing.*

Every student who has been selected for an Entrance Scholarship receives an honorary $100 award. Such a student in financial need may have this amount substantially augmented. Scholarships such as the J.W. McConnell Memorial and Morris W. Wilson Memorial Scholarships will be awarded to scholars who need full tuition, board and residence. J.W. McConnell Entrance Scholarships in Science and Engineering may provide for tuition, books, board and residence or a lesser amount depending upon need.

Entrance Scholarships are open to Canadian citizens, landed immigrants with one year's residence in Canada, and graduates of Canadian high schools, colleges and other educational institutions. Students from schools outside Canada are ineligible for entrance scholarships. Entrance Scholarships are awarded only to full-time students in a program of study leading to an undergraduate degree, and applicants must be entering the First year of such a program.

Students should apply for an Entrance Scholarship by completing the Application for Entrance Scholarship. These forms may be obtained from the Admissions Office and must be submitted by March 1 for September awards and by November 1 for January awards. Students who have completed this application will be considered automatically for every entrance scholarship for which they are eligible. As many as 250 entrance scholarships may be awarded in any one academic year.

AWARDS TO McGILL STUDENTS IN COURSE

Once a student is in course at McGill all undergraduate scholarships, prizes and medals are awarded on the year-end examination results, and *no applications are required.*

The University Scholarships Committee is responsible for awarding Entrance Scholarships, University Scholarships and Special-Named Awards. The Committee is also responsible for overseeing all scholarship policy of the University and is composed of Chairmen of Faculty Scholarship Committees, representatives from the University at large and student members.

Faculty scholarships and awards are made by Faculty Scholarship Committees. Scholarships are awarded only to full-time students taking a program of study leading to a degree. Scholarships are awarded or renewed only if an adequate scholarship standing is attained.

Students whose University Scholarships have been renewed and who need financial assistance should apply directly to the Student Aid and Foreign Student Advisor's Office.

All awards, with the exception of prizes, are credited to the tuition fee accounts of students for the following academic year.

Full information concerning undergraduate awards and bursaries is contained in the *Undergraduate Scholarships, and Awards Announcement* which may be obtained from the Registrar's Office.

Inquiries concerning undergraduate scholarships should be referred to the Scholarships Office in the Registrar's Office.

BURSARIES AND LOANS

Applications for McGill bursaries and loans should be directed to the Student Aid and Foreign Student Advisor's Office, McGill University, 3465 Peel Street, Montreal, Quebec H3A 1W7. These awards are made on the basis of financial need.

All applicants for aid are also expected to apply for maximum government grants or other assistance for which they may be eligible.

United States Citizens

The National Defence Loan is not tenable in Canada, but several states have long term loan plans which are tenable here. Students should inquire at the Department of Education in their state capital and also at local banks which may operate a Higher Education Loan Plan.

PROVINCIAL BURSARIES AND LOANS

In all cases, a basic qualification is that the applicant must be a Canadian citizen or a landed immigrant with one year's residence and domiciled in the province to which he applies.

In all provinces, except Quebec and Ontario, the provincial authority listed below administers the Canada Student Loan Plan (Federal) as well as their own programs. The addresses are as follows:

Quebec: Apply after May 1, at the Student Aid Office, McGill University, 3465 Peel Street, Montreal, Quebec H3A 1W7.

Ontario: Apply after May 1 to the Ministry of Colleges and Universities, Students Awards Branch, Mowat Block, Queen's Park, Toronto, Ont. M7A 2B4.

New Brunswick: Department of Youth & Welfare, Fredericton, N.B.

Yukon Territory: The Students Financial Assistance Awards Committee, c/o Superintendent of Schools, Box 2703, Whitehorse, Yukon.

Northwest Territories: c/o Education Division, Department of Northern Affairs & Resources, 150 Kent Street, Ottawa, Ontario.

For the Provinces of Newfoundland, Prince Edward Island, Nova Scotia, Manitoba, Saskatchewan, Alberta, British Columbia: write to the Provincial Department of Education.

GRADUATE FELLOWSHIPS

Full information concerning postgraduate awards is contained in the *Postgraduate Awards, Fellowships and Bursaries Announcement* which may be obtained from the Fellowships Office, Faculty of Graduate Studies and Research, or from the Registrar's Office.

Inquiries about graduate fellowships, etc., which are open to graduates of other universities as well as of Canadian universities should be addressed to the Fellowships Office, Faculty of Graduate Studies and Research. Inquiries about assistantships should be directed to the individual Departments.

8 1976 — 77 CALENDAR OF DATES

In most faculties and schools lectures begin on Sep. 13, 1976, and end on Apr. 15, 1977. Spring examinations begin on Apr. 18, 1977.

1976

May 10, Mon.	Last day for holding doctoral orals for Spring Convocation.
May 10, Mon., to June 18, Fri.	Summer Session Part I.
May 24, Mon.	VICTORIA DAY. Administrative offices will be closed.
May 27, Thurs.	Health Sciences Convocation.
May 29, Sat.	Agriculture Convocation.
May 31, Mon.	Summer Session Part I First term examinations.
June 1, Tues.	Forms nominating examiners for students' theses to be returned to Thesis Office.
June 8, Tues., and June 9, Wed.	Convocation in all other faculties and schools.
June 10, Thurs., and June 11, Fri.	Supplemental examinations in Faculty of Agriculture, School of Food Science and diploma programs in Agriculture.

June 21, Mon.	Summer Session Part I Second term examinations.
June 24, Thurs.	ST. JEAN BAPTISTE DAY. Administrative offices will be closed.
June 26, Sat., to Aug. 8, Sun.	French Summer School.
July 1, Thurs.	CANADA DAY. Administrative offices will be closed.
July 2, Fri.	Last day for submitting completed applications for admission to most departments in the Faculty of Graduate Studies and Research.
July 5, Mon., to Aug. 13, Fri.	Summer Session Part II.
July 26, Mon.	Summer Session Part II First term examinations.
Aug. 10, Tues., to Aug. 19, Thurs.	Supplemental examinations in Arts, Science, Management, Physical Therapy, Occupational Therapy, Religious Studies, Nursing and degree and diploma programs in Education.
Aug. 16, Mon.	Summer Session Part II Second term examinations. Last day for submitting Doctoral theses for Fall Convocation.
Aug. 16, Mon., to Sep. 3, Fri.	Freshman Orientation and pre-registration counselling in Arts, Science, Nursing and Physical and Occupational Therapy.
Aug. 23, Mon.	Last day for submitting Masters' theses for Fall Convocation.
Aug. 23, Mon., to Sep. 3, Fri.	Freshman counselling and orientation in Management.
Sep. 1, Wed.	Orientation in First year Medicine.
Sept. 2, Thurs.	Lectures begin in First, Second and Third years Medicine. Pre-registration counselling for B.Ed. U3 students.
Sep. 2, Thurs., and Sep. 3, Fri.	Pre-registration counselling in Engineering, Architecture and B.Sc. (Arch.).
Sep. 3, Fri.	Pre-registration counselling for returning B.Ed. U2 students.
Sep. 1, Wed., to Sep. 11, Sat.	**REGISTRATION PERIOD**
Sep. 1, Wed.	Medicine (9:00 a.m. — 5:00 p.m., McIntyre Medical Building).
Sep. 7, Tues.	Engineering, Architecture, B.Sc. (Arch.), Management (A-L, 8:30 a.m. — 12:00 noon; M-Z, 2:00 — 5:00 p.m.).
	Law and Dentistry (2:00 — 6:00 p.m.).
Sep. 8, Wed.	Science (A-D, 8:30 a.m. — 12:00 noon; E-K, 2:00 — 5:00 p.m.).
	Nursing and Physical and Occupational Therapy (A-K, 8:30 a.m. — 12:00 noon; L-Z, 2:00 — 5:00 p.m.).
	Diploma programs in Education (A-K, 1:00 — 3:00 p.m.; L-Z, 3:00 — 5:00 p.m.)
Sep. 9, Thurs.	Science (L-Z, 8:30 a.m. — 12:30 p.m.).
	Arts and B.S.W. (A-D, 2:30 — 5:00 p.m.).
Sep. 10, Fri.	Arts and B.S.W. (E-G, 8:30 a.m. — 12:00 noon; H-K, 2:00 — 5:00 p.m.
	Degree programs in Education (Returning students, A-K, 8:30 — 10:30 a.m.; L-Z, 10:30 a.m. — 12:30 p.m. New students, A-K, 1:00 — 3:00 p.m.; L-Z, 3:00 — 5:00 p.m.)
	Religious Studies (8:30 a.m. — 5:00 p.m.).
	I.D. cards for Music (8:30 a.m. — 5:00 p.m.) (Counselling and registration period in Music in Strathcona Music Building from Sep. 7 — Sep. 10).

Sep. 10, Fri. (con't)	Agriculture, Food Science and diploma programs in Agriculture at Macdonald College, new students, 9:00 a.m. — 12:00 noon; returning students, 2:00 — 4:30 p.m.
Sep. 11, Sat.	Arts and B.S.W. (L-P, 8:30 a.m. — 12:00 noon; Q-Z, 2:00 — 5:00 p.m.).
Sep. 6, Mon.	LABOUR DAY. Administrative offices will be closed.
Sep. 7, Tues.	Non-thesis forms to be returned to Thesis Office for Fall Convocation.
Sep. 8, Wed	Enrolment of First year students in the Graduate School of Library Science. Lectures begin in all years Dentistry and Law. Pre-registration counselling for all new students in degree programs in Education, A-K.
Sep. 8, Wed., to Sep. 17, Fri.	Registration in the Faculty of Graduate Studies and Research in individual departments.
Sep. 9, Thurs	Pre-registration counselling for all new students in degree programs in Education, L-Z. Lectures begin in First year Graduate School of Library Science.
Sep. 10, Fri.	Lectures begin for M.S.W. students.
Sep. 13, Mon.	Lectures begin in Arts, Science, Education, B.S.W., Agriculture, Food Science, diploma programs in Agriculture, Engineering, Architecture, B.Sc. (Arch.), Management, Music, Nursing, Physical and Occupational Therapy, Graduate Studies and Research, Religious Studies, and Second year Graduate School of Library Science.
Sep. 13, Mon. to Oct. 1, Fri.	Change of course period in Music.
Sep. 17, Fri.	Last day for departments to return completed registration forms for students in the Faculty of Graduate Studies and Research to the Faculty Office.
Sep. 22, Wed., to Sep. 26, Sun.	Fall Fair and Open House at Macdonald College.
Sep. 27, Mon.	All thesis reports to be returned to Thesis Office.
Sep. 27, Mon. to Oct. 1, Fri.	Change of course period in Arts, Science, Education, Engineering and Management.
Sep. 28, Tues.	Late registration in all faculties.
Sep. 29, Wed., and Sep. 30, Thurs.	Validation of I.D. cards for students in the Faculty of Graduate Studies and Research provided their registration was completed by Fri., Sep. 17.
Oct. 7, Thurs.	Last day for Fall term course changes in Agriculture, Food Science and diploma programs in Agriculture.
Oct. 11, Mon.	THANKSGIVING DAY. Lectures cancelled. Administrative offices will be closed.
Oct. 12, Tues.	Last day for holding Doctoral orals for Fall Convocation
Oct. 29, Fri.	Last day for Fall term and full-course changes in most departments in the Faculty of Graduate Studies and Research.
Nov. 9, Tues.	Fall Convocation.
Nov. 15, Mon., to Nov. 19, Fri.	Practical examinations in Music.
Dec. 10, Fri.	Last day of lectures in Arts, Science, Education (except diploma in Education), B.S.W., Agriculture, Food Science, diploma programs in Agriculture, Engineering, Architecture, B.Sc. (Arch.), Management, Nursing, Physical and Occupational Therapy, Graduate Studies and Research and Religious Studies.
Dec. 10, Fri., to Dec. 15, Wed.	Examinations in First year Graduate School of Library Science.

Dec. 13, Mon., to Dec. 17, Fri.	Examinations in Fall term courses given by Physical and Occupational Therapy and Music.
	Class Tests in D Courses in Arts, Science, Education and Nursing.
Dec. 13, Mon., to Dec. 23, Thurs.	Examinations in courses given by Law, Engineering, Architecture, B.Sc. (Arch.), and Management.
Dec. 14, Tues., to Dec. 22, Wed.	Examinations in Fall term courses given by Agriculture, Food Science and diploma programs in Agriculture.
Dec. 15, Wed.	Fall term ends in Graduate School of Library Science.
Dec. 16, Thurs.	Last day of Fall term lectures in diploma programs in Education.
Dec. 17, Fri.	Last day of Fall term lectures in all other programs.
	Class tests in D courses in diploma programs in Education.
Dec. 25, Sat.	CHRISTMAS DAY. Closing of Administrative offices to be announced.
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Jan. 1, Sat.	NEW YEAR'S DAY. Closing of Administrative offices to be announced.
Jan. 3, Mon.	Winter term begins for M.S.W. students.
Jan. 4, Tues., to Jan. 14, Fri.	Examinations in Fall term courses given by Arts, Science, Education, Nursing, B.S.W. and Religious Studies.
Jan. 4, Tues.	Winter term begins in Law and Dentistry.
	Lectures resume in Medicine.
Jan. 5, Wed.	Winter term registration for new students in Agriculture, Food Science and diploma in Agriculture at Macdonald College.
Jan. 6, Thurs.	Winter term begins in Agriculture, Food Science and diploma programs in Agriculture.
Jan. 7, Fri.	Winter term registration for new students in Music in Strathcona Music Building.
Jan. 10, Mon.	Winter term begins in Graduate School of Library Science, diploma programs in Education and in courses given by Music.
Jan. 10, Mon., to Jan. 28, Fri.	Change of course period for Winter term courses in Music.
Jan. 14, Fri.	Winter term registration for new students in Arts, Science, Education, Engineering, Management and Religious Studies (10:00 a.m. — 5:00 p.m.)
	Last day for change of status and January registration in the Faculty of Graduate Studies and Research.
Jan. 17, Mon.	Winter term lectures begin in Arts, Science, Education (except diploma programs in Education, see above), Engineering, Architecture, B.Sc. (Arch.), Management, Religious Studies, Graduate Studies and Research, Nursing, B.S.W., and Physical and Occupational Therapy.
Jan. 24, Mon., to Jan. 28, Fri.	Change of course period for winter term courses in Arts, Science, Education, Engineering and Management.
Jan. 28, Fri., to Feb. 5, Sat.	Winter Carnival at Macdonald College.
Feb. 1, Tues.	Forms nominating examiners for students' theses to be returned to Thesis Office.
Feb. 2, Wed.	Ski Day at Macdonald College.
Feb. 4, Fri.	Last day for Winter term course changes in the Faculty of Graduate Studies and Research.
Feb. 7, Mon.	Last day for Winter term course changes in Agriculture, Food Science and diploma programs in Agriculture.
Feb. 10, Thurs.	Macdonald College Founder's Day.

Feb. 11, Fri., and Feb. 12, Sat.	Mid-term weekend holiday (Winter Carnival) (Montreal Campus). Lectures cancelled.
Feb. 21, Mon., to Feb. 25, Fri.	Study week in Law. Practical examinations in Music.
Feb. 26, Sat., to Mar. 1, Tues.	Mid-term holiday on Macdonald Campus. Lectures cancelled at Macdonald College.
Mar. 14, Mon.	Last day for submitting Doctoral theses for Spring Convocation.
Mar. 21, Mon.	Last day for submitting Masters' theses for Spring Convocation.
Apr. 6, Wed.	Last day of lectures in Agriculture, Food Science and diploma programs in Agriculture.
Apr. 8, Fri., to Apr. 11, Mon. (inclusive)	EASTER. Administrative offices will be closed from 5:00 p.m. Thursday, Apr. 7, until 9:00 a.m., Tuesday, Apr. 12. Lectures cancelled.
Apr. 13, Wed., to Apr. 22, Fri.	Examinations in courses given by Agriculture, Food Science and diploma programs in Agriculture.
Apr. 15, Fri.	Last day of lectures in Arts, Science, B.S.W., Education (except diploma in Education, see below), Law, Engineering, Architecture, B.Sc. (Arch), Management, Nursing, Physical and Occupational Therapy, Graduate Studies and Research, Religious Studies and Music.
	Last day of lectures in Third and Fourth years Dentistry.
Apr. 18, Mon.	Examinations begin in courses given by Law.
Apr. 18, Mon., to Apr. 22, Fri.	Examinations in lecture courses in Music.
Apr. 18, Mon., to Apr. 29, Fri.	Pre-registration counselling in Management for students returning for 1977-78 session.
Apr. 18, Mon., to May 6, Fri. (tentative ending date)	Examinations in Winter term and full courses given by Arts, Science, B.S.W., Education (except diploma program in Education), Engineering Architecture, B.Sc. (Arch.), Management, Nursing, Physical and Occupational Therapy and Religious Studies.
Apr. 19, Tues.	Winter term ends in Second year Graduate School of Library Science. Examinations begin in Fourth year Dentistry.
Apr. 20, Wed.	Lectures resume for Special B.S.W. students.
Apr. 22, Fri.	Last day of lectures in diploma programs in Education Winter term ends in First year Graduate School of Library Science.
Apr. 25, Mon.	Examinations begin in Third year Dentistry. All thesis reports to be returned to Thesis Office.
Apr. 25, Mon., and Apr. 26, Tues.	Examinations in diploma programs in Education.
Apr. 25, Mon., to May 6, Fri.	Practical examinations in Music.
May 5, Thurs.	Non-thesis forms to be returned to Thesis Office for Spring Convocation
May 9, Mon.	Last day for holding Doctoral orals for Spring Convocation.
May 23, Mon.	VICTORIA DAY. Administrative offices will be closed.
May 26, Thurs.	Health Sciences Convocation.
May 27, Fri.	Senate meeting for granting degrees and diplomas.
June 4, Sat.	Agriculture Convocation.

June 7, Tues., and June 8, Wed.	Convocations in all other faculties and schools.
June 17, Fri.	Last day of lectures in First year Medicine and in First and Second years Dentistry.

UNIVERSITY LIBRARIES CALENDAR 1976-77

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June 24, Thurs.	ST. JEAN BAPTISTE DAY. Libraries closed.
July 1, Thurs.	CANADA DAY. Libraries closed.
Sep. 6, Mon.	LABOUR DAY. Libraries closed.
Oct. 11, Mon.	THANKSGIVING. Libraries closed.
Nov. 9, Tues.	Fall Convocation. Libraries open.
Dec. 11, Sat., to January 3, Mon. 1977	CHRISTMAS-NEW YEAR'S VACATION. Hours to be announced.
Dec. 25, Sat.	CHRISTMAS DAY. Libraries closed.

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Jan. 1, Sat.	NEW YEAR'S DAY. Libraries closed.
Feb. 11, Fri. and Feb. 12, Sat.	Mid-term weekend holiday. Libraries open.
April 8, Fri., to April 11, Mon.	EASTER VACATION. Hours to be announced.
May 24, Tues	VICTORIA DAY. Libraries closed.

Specific information concerning opening hours is available from the individual libraries.

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UNDERGRADUATE SCHOLARSHIPS AND AWARDS

1976/77

REFERENCE DEPARTMENT
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McGill University
Montreal

The University reserves the right to make changes without prior notice to the information contained in this publication, including the alteration of various fees schedules and the revision or cancellation of particular courses.

UNDERGRADUATE SCHOLARSHIPS AND AWARDS

1976 — 77

McGill University
P.O. Box 6070, Station A
Montreal, Quebec, Canada H3C 3G1

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1 GENERAL INFORMATION

1.1 Entrance Scholarships

In general the University's system of entrance scholarships is designed to enable good students from all parts of Canada to attend McGill. The policy of the University is to recognize and honour scholarship, and the University Scholarships Committee selects scholarship winners from among those students who have obtained or who expect to obtain *a first class academic standing.*

Every student who has been selected for an Entrance Scholarship receives an honorary $100 award. Such a student in financial need may have this amount substantially augmented. Scholarships such as the J.W. McConnell Memorial and Morris W. Wilson Memorial Scholarships will be awarded to scholars who need full tuition, board and residence. J.W. McConnell Entrance Scholarships in Science and Engineering may provide for tuition, books, board and residence or a lesser amount depending upon need.

Entrance Scholarships are open to Canadian citizens, landed immigrants with one year's residence in Canada, and graduates of Canadian high schools, colleges and other educational institutions. Entrance Scholarships are awarded only to full-time students in a program of study leading to an undergraduate degree, and applicants must be entering the First year of such a program.

Students should apply for an Entrance Scholarship by completing the Application for Entrance Scholarship. These forms may be obtained from the Admissions Office and must be submitted by March 1 for September awards and by November 1 for January awards. Students who have completed this application will be considered automatically for every entrance scholarship for which they are eligible. As many as 250 entrance scholarships may be awarded in any one academic year.

1.2 Awards To McGill Students In Course

Once a student is in course at McGill all undergraduate scholarships, prizes and medals are awarded on the year-end examination results, and *no applications are required.*

The University Scholarships Committee is responsible for awarding Entrance Scholarships, University Scholarships and Special-Named Awards. The Committee is also responsible for overseeing all scholarship policy of the University and is composed of Chairmen of Faculty Scholarship Committees, representatives from the University at large and student members.

Faculty scholarships and awards are made by Faculty Scholarships Committees. Scholarships are awarded only to full-time students taking a program of study leading to a degree. However students should enquire what constitutes a full-time student in their specific faculty or school for scholarship purposes. Scholarships are awarded or renewed only if an adequate scholarship standing is attained.

Students whose University Scholarships have been renewed and who need financial assistance should apply directly to the Student Aid and Foreign Student Advisor's Office.

All awards, with the exception of prizes, are credited to the tuition fee accounts of students for the following academic year.

Students who hold a University or J.W. McConnell Scholarship (in Science or Engineering) in their final year receive a Scholarship Certificate on graduation listing all such awards held during the undergraduate program. If such a Scholarship has not been held in the final year but possibly awarded in the preceding years, these Certificates are available on request from the Scholarships Office.

Inquiries concerning undergraduate scholarships should be referred to the Scholarships Office in the Registrar's Office.

1.3 Bursaries And Loans

Applications for McGill bursaries and loans should be directed to the Student Aid and Foreign Student Advisor's Office, McGill University, P.O. Box 6070, Station A, 3465 Peel Street, Montreal, Quebec H3A 1W7. These awards are made on the basis of financial need.

All applicants for aid are also expected to apply for maximum government grants or other assistance for which they may be eligible (see section 1). The Student Aid Office may be able to estimate the amount of such assistance and should be consulted.

1.4 Provincial Bursaries And Loans

In all cases, a basic qualification is that the applicant must be a Canadian citizen or a landed immigrant with one year's residence and domiciled in the province to which he applies.

When a student applies for financial assistance from government, Canadian or non-Canadian, and when certification of the student's status is required on such an application form such certification must be obtained from the McGill Student Aid Office.

In all provinces, except Quebec, the provincial authority listed below administers the Canada Student Loan Plan (Federal) as well as their own programs. The addresses are as follows:

Quebec: Apply after May 1, at the Student Aid Office, McGill University, P.O. Box 6070, 3465 Peel Street, Montreal, Quebec H3A 1W7.

Ontario: Application forms for Ontario aid may be obtained after May 1 from the Ministry of Colleges and Universities, Students Awards Branch, Mowat Block, Queen's Park, Toronto, Ont. M7A 2B4.

New Brunswick: Department of Youth & Welfare, Fredericton, N.B.

Yukon Territory: The Students Financial Assistance Awards Committee, c/o Superintendent of Schools, Box 2703, Whitehorse, Yukon.

Northwest Territories: c/o Education Division, Department of Northern Affairs & Resources, 150 Kent Street, Ottawa, Ontario.

For the Provinces of Newfoundland, Prince Edward Island, Nova Scotia, Manitoba, Saskatchewan, Alberta, British Columbia: write to the Provincial Department of Education.

1.5 General Regulations

1) Scholarships are awarded and bursaries and loans are granted only to full-time students in a program of study leading to an undergraduate degree.

2) Scholarships are awarded or renewed only if an adequate academic standing for scholarship recognition is attained.

3) Students who are unsatisfied with the amount of an award as decided upon by the Student Aid Office, may appeal their case to the Appeals Committee through the Scholarships Office.

Information concerning Postgraduate Awards, Fellowships and Bursaries is contained in a separate booklet, which may be obtained from the Fellowships Office, Faculty of Graduate Studies and Research, or the Registrar's Office.

2 ENTRANCE SCHOLARSHIPS AND BURSARIES

2.1 Entrance Scholarships

For General Information on Entrance Scholarships, see Section 1.1.

SIR EDWARD BEATTY MEMORIAL SCHOLARSHIPS. — Six scholarships in Mathematics or in Classics (Greek and Latin) of an annual value of $250. Renewable until completion of first degree and open to students entering the Faculty of Arts or of Science. Founded by the late Sir Edward Beatty, former Chancellor of the University. Open only to students who are Canadian citizens or landed immigrants, and awarded primarily for ability in either Classics or Mathematics, but ability in other subjects may be taken into account. The winners on entering the University need not necessarily take courses leading to honours in Classics or in Mathematics, but may enter any course for which they are qualified in the Faculties.

CHRISTIE-STORER SCHOLARSHIP. — Value $500, endowed by the above-named Chapter of the I.O.D.E. in memory of the men of St. Lambert who fell in the Great War, 1914-18. Awarded to a former graduate student of Chambly County High School residing in St. Lambert who obtains the highest marks for admission to the University entering any full-time undergraduate degree course. Tenable for one year only.

CONSUMERS GLASS COMPANY LIMITED FRANK P. JONES EDUCATION AWARDS. — Open to children or wards of employees and retired employees of Consumers Glass Company Limited for a full-time course of study in any Canadian university or college recognized by the Association of Universities and Colleges of Canada. Value $1,000 per year until completion of first degree. Awards are automatically renewed provided the students establish continuing eligibility and successfully complete the preceding academic year. Further information and application forms which must be submitted by June 30 may be obtained from the Director of Awards, Association of Universities and Colleges of Canada, 151 Slater St., Ottawa, Ont., K1P 5N1.

GEORGE HERRICK DUGGAN MEMORIAL SCHOLARSHIP (DOMINION BRIDGE COMPANY, LIMITED). — Offered by Dominion Bridge Company, Limited, open to all employees of the Company (who have been in continuous service of the Company for at least one year) and its wholly owned subsidiary companies, and to their sons and daughters. Certificates of eligibility for the scholarship must be obtained from the Personnel Department of the Company.

This scholarship will cover tuition fees. In the case of winners from outside Montreal who must meet their own living expenses the amount necessary to cover tuition fees could be augmented somewhat at the discretion of the University Scholarships Committee.

Intended to provide an incentive to eligible candidates to qualify for a university education and to afford them financial assistance while pursuing university studies. The scholarship is tenable in any undergraduate degree course at McGill University and is awarded on the intellectual attainment and academic record of the winner. It may be granted until completion of first undergraduate degree.

In exceptional cases qualified students already in course at McGill may be considered for this scholarship.

GEORGE HERRICK DUGGAN MEMORIAL SCHOLARSHIP (DOMINION ENGINEERING WORKS, LIMITED). — Offered by Dominion Engineering Works, Limited, open to all its employees and those of its wholly owned subsidiary companies, and to their sons and daughters. Certificates

of eligibility for the scholarship must be obtained from the Personnel Department of the Company.

The value of this scholarship will not exceed $750 if the winner comes from outside Montreal, or if the Committee judges it is desirable for the winner to reside away from home in the interests of his academic work. If the winner can live at home, however, the value will be equivalent to full tuition fees, and the Awarding Committee may in this case make an additional grant where there is financial need.

Intended to provide an incentive to eligible candidates to qualify themselves for a university education in engineering or scientific work or allied subjects, and to afford them financial assistance while pursuing university studies, the scholarship is awarded on the intellectual attainment and academic record of the winner. It may be granted until completion of first undergraduate degree.

In exceptional cases qualified students in the Faculty of Science and the Faculty of Engineering may be considered for this scholarship.

GRACE FAIRLEY TRAFALGAR SCHOLARSHIP. — $200, founded in 1913 by friends and former pupils of the late Miss Grace Fairley, to signalize her long and faithful service to education as head of the Trafalgar Institute. Tenable for one year only and awarded annually to a former graduate pupil of Trafalgar School who obtains the highest marks for admission to the University entering any full-time undergraduate degree course.

NARCISSA FARRAND (MRS. N. PETTES) SCHOLARSHIP. — Founded and endowed by Mr. and Mrs. H.V. Truell, of Sweet Acre, Knowlton, Quebec. Renewable until completion of first degree provided the holder maintains a standing satisfactory to the University Scholarships Committee. Awarded annually to the candidate from the Eastern Townships who obtains the highest marks for admission to the University entering any full-time degree course and who has had his domicile in the Eastern Townships for at least five years.

SCHOLARSHIPS GRANTED BY THE GRADUATES SOCIETY OF THE DISTRICT OF BEDFORD. — $450, awarded to a student who has taken his or her Grades IX, X, and XI in one of the High Schools of the District of Bedford and who obtains the highest marks for admission to the University to take any full-time undergraduate degree course. May be divided between two students, and is awarded by the Society upon the recommendation of the University Scholarships Committee.

SIDNEY J. HODGSON SCHOLARSHIPS. — Two scholarships of $400 each, founded by Arthur J. Hodgson, Esq., in memory of his son, Sidney James Hodgson, a student of the First year in Arts, who was killed in action on September 27, 1918, while serving in the 66th Battery of the Canadian Field Artillery. Awarded to former graduate pupils of Westmount High School who obtain the highest marks for admission to the University entering any full-time undergraduate degree course.

HARRY LEIBOVITCH SCHOLARSHIP. — Established by a bequest from the late Harry Leibovitch and awarded under the same conditions as the David Wolfson Scholarships described below.

SIR WILLIAM MACDONALD ENTRANCE SCHOLARSHIPS. — Value $800 each, tenable for one year only, endowed by Sir William Macdonald and open to all students. Three of these scholarships are open to students entering the Faculty of Arts or of Science and one is available for a student entering the Faculty of Management.

JAMES DAVIDSON McCALL SCHOLARSHIP. — Value $1,000. Founded by his family in memory of James Davidson McCall, B.Eng., who was accidentally killed in September 1953, the year of his graduation. Awarded to a student of Canadian citizenship entering the Faculty of Engineering, is renewable until graduation provided the holder maintains satisfactory academic standing. Awarded on academic merit and financial need.

DUNCAN McCASKILL SCHOLARSHIP. — Restricted to students from Nova Scotia. Value $600, renewable until the holder obtains his or her first degree provided the holder maintains an academic average satisfactory to the University Scholarships Committee.

J.W. McCONNELL MEMORIAL SCHOLARSHIPS. — Created and endowed by the late Mr. J.W. McConnell of the Board of Governors as a memorial to the men and women of the University who gave their lives in the war of 1939-45. Open on equal terms to men and women from any part of Canada and tenable in the Faculty of Arts, the Faculty of Science, the Faculty of Management, or the Faculty of Engineering. Each scholarship covers full tuition fees plus cost of board, residence and books and is renewable until completion of first degree. Awards are based on character, financial need and academic record of the applicant. The holder will normally forfeit the scholarship if he fails to maintain satisfactory academic standing for scholarship recognition.

J.W. McCONNELL SCHOLARSHIPS IN SCIENCE AND ENGINEERING. — Made possible through the generous donation of the late Mr. J.W. McConnell, awarded to students proceeding to degrees in any field of Science or Engineering and renewable each year provided academic standing satisfactory to the University Scholarships Committee is maintained. Candidates must be Canadian citizens or landed immigrants, and, on proof of need, may receive up to full tuition fees plus the cost of board, residence and books.

T.H. McGLADE SCHOLARSHIP. — $1,000 annually, established in 1967 by T.H. McGlade, B.A. 1947, for an entrance scholarship. Tenable for one year only by a student entering any faculty who is a

graduate of either Smiths Falls Collegiate Institute or St. Francis High School in Smiths Falls, Ontario. If there is no qualified applicant from these two institutions, the scholarship shall be open to graduates of other secondary schools of the County of Lanark in Ontario or to candidates from the Upper St. Lawrence Valley, particularly from the Brockville and Prescott areas. Awarded by the University Scholarships Committee on the basis of academic merit, character and financial need.

MINING AND METALLURGICAL ENGINEERING ENTRANCE SCHOLARSHIPS. — Established by the department from funds given by industry and private donation. To be awarded on merit, a maximum of ten scholarships of $1,000 each to students entering the Mining and Geophysics Program and ten of $1,000 each to students entering Metallurgical Engineering. Renewable until graduation provided satisfactory academic standing is maintained. Awards will be made by the University Scholarships Committee on recommendation from the Department Selection Committee.

JESSIE NORRIS MEMORIAL AWARD. — $250 awarded annually to a Quebec CEGEP student entering the First year of the University program in the Faculty of Arts or of Science who obtains excellent standing in English Composition and Literature before coming to McGill.

MONA PRENTICE AWARD. — Value $500, established by a bequest from the late Mona Prentice. Awarded to a student for high academic standing entering any faculty of the University. Tenable for one year only.

RALSTON AWARD. — Value $200, established by a bequest from the late Hazel Vivian Ralston in memory of Sgt. Pilot Herbert James Ralston and Lt. William Edward Ralston who were killed in the Second World War and who were both graduates of Westmount High School. Awarded annually to a former graduate student of Westmount High School who has good academic standing and is entering any full-time undergraduate degree course of McGill University.

SEBA ABBOTT SMITH MEMORIAL SCHOLARSHIP. — Value $600 renewable annually until completion of first degree provided the holder maintains an academic standing satisfactory to the University Scholarships Committee.

UNIVERSITY ENTRANCE SCHOLARSHIPS. — Awarded on the basis of academic record and open to men and women from any part of Canada. Tenable in any undergraduate degree course and renewable annually until graduation provided sufficiently high academic standing for scholarship purposes is maintained. University Entrance Scholarships carry a nominal recognition ($100) of their outstanding achievement. Where there is financial need, however, winners may receive further assistance.

MORRIS W. WILSON MEMORIAL SCHOLARSHIPS. — Established by contributions from a large number of intimate friends and business associates of the late Morris W. Wilson as a memorial to a distinguished citizen who, among many public activities, rendered distinguished service to the cause of education, and who, at the time of his death, was Chancellor of McGill University. The fund marks the culmination of a hope long cherished by Mr. Wilson, that young Canadian boys and girls of outstanding ability and promise, but in poor financial circumstances, might obtain a university education. It is hoped that this fund may assist many deserving young Canadians, particularly those from rural areas, to become better equipped to perform the duties of citizenship and so more effectively to aid in the general development and welfare of their country.

Open on equal terms to men and women of Canadian parentage, now resident in Canada, and open only to students who wish to enter the Faculty of Arts, the Faculty of Science, the Faculty of Management, the Faculty of Engineering, or the degree course in Agriculture at Macdonald College. Each scholarship covers the full tuition fee, as well as the cost of board and residence and is renewable until completion of first degree. The holder will normally forfeit the scholarship if he fails to maintain satisfactory academic standing for scholarship recognition.

DAVID WOLFSON SCHOLARSHIPS. — Two scholarships endowed by Mr. David Wolfson to enable outstanding men and women from all parts of Canada who would not otherwise be able to do so to attend the University. Awarded both to students entering undergraduate degree courses and to students entering any professional faculty of the University except Graduate Studies and Research. The undergraduate work of students entering such professional faculties as Medicine, Dentistry, Law, Religious Studies, etc., must have been completed at some other university. Renewable until completion of first degree, or for the period required for the degree in a professional faculty, provided academic standing satisfactory to the University Scholarships Committee is maintained. The amount awarded depends upon need but may extend to the full costs of tuition, residence and board.

Normally, David Wolfson Scholarships are awarded only to students who reside outside the Montreal area.

2.2 *Entrance Bursaries*

BECHTEL FOUNDATION OF CANADA BURSARY.

CAL CALLAHAN MEMORIAL BURSARY. — The Pipe Line Contractors Association of Canada offers a bursary, or bursaries, to the total of $1,000 per annum, to be awarded annually, to sons, daughters or legal wards of persons who derive their principal income from the Pipe-line Industry and whose employers are members of the Association. Further

information may be obtained from the Association's Executive Office, Suite 400, 698 Seymour Street, Vancouver, British Columbia V6B 3K7. Application deadline is September 30th.

CHILDREN OF WAR DEAD (EDUCATION ASSISTANCE) ACT.

ENGINEERS' WIVES' ASSOCIATION OF MONTREAL BURSARY. — Established in 1961 by a donation from the Professional Engineers' Wives' Association and awarded in alternate years to a needy and deserving student who is entering either First or Second year in the Faculty of Engineering.*

ROBERT CRAIG FANNING MEMORIAL BURSARY FUND. — Established in 1974 by the parents and friends of Robert Craig Fanning, a student in the Faculty of Science, who suffered a fatal accident following his graduation. Awarded to a student in the Faculty of Science, initially with a preference for students enrolled in the Department of Biology's Field Course on Ecology.*

FEDERAL-PROVINCIAL LOANS AND BURSARIES.

KHAKI UNIVERSITY AND Y.M.C.A. MEMORIAL SCHOLARSHIP FUND.*

ISABELLA C. MacRAE SCHOLARSHIP. — Open to residents of Ontario.*

GEORGE J. McMANUS MEMORIAL SCHOLARSHIPS.

EDGAR R. PARKINS MEMORIAL SCHOLARSHIPS AND BURSARIES. — For entering students or for students already in course. The entrance scholarships will be awarded by the University Scholarships Committee and the bursaries by the Student Aid Office without restriction as to faculty. Maximum scholarship value, according to need, up to tuition fees for Montreal residents, up to the amount of tuition fees plus room and board for non-residents.*

QUEEN ESTHER CHAPTER No. 30 ORDER OF THE EASTERN STAR BURSARY. — $100, established in 1951 and awarded to a deserving student entering the University.*

ST. FRANCIS DISTRICT GRADUATES' SOCIETY BURSARY. — $400, restricted to residents of the area covered by the St. Francis District Branch of the Graduates' Society and open to pupils of any high school or private school entering any faculty or school of McGill University, including Macdonald College. May be renewed for a second year. $250 of the Bursary is to be repaid by the holder at a minimum of $50 per year after graduation. Awarded by the Society on the recommendation of the University Scholarships Committee.

STEEL COMPANY OF CANADA LIMITED BURSARY. — $500 for a maximum of four years to any one student. Open to permanent residents of Canada. Awarded to a capable student who might not otherwise go to University because of lack of funds. Should the student withdraw or perform below the standards set for him, the Bursary may be awarded to another student who has the same number of years to complete before graduation.*

UNIVERSITY BURSARIES.

EDGAR WILSON AND MARGARET WILSON SCHOLARSHIPS.

WOMEN ASSOCIATES OF McGILL BURSARY.

3 SCHOLARSHIPS, BURSARIES, PRIZES AND LOAN FUNDS IN THE VARIOUS FACULTIES AND SCHOOLS OF THE UNIVERSITY

3.1 Open To Students In All Faculties

Scholarships and Bursaries

AID TO THE PHYSICALLY HANDICAPPED (QUEBEC). — Students in any faculty who are Canadian citizens or landed immigrants and have been resident and domiciled in Quebec for two years may apply for an outright grant if they have suffered from poliomyelitis, tuberculosis, certain forms of cardiac trouble, or some other physical disability. Applications available from Regional Office, Department of Education, 190 Cremazie E., Montreal, Que.

ALPHA OMICRON PI BURSARY.

ANONYMOUS DONATION FOR BURSARIES. — Established by an anonymous donor through the Graduates' Society in 1959. Awarded to students entering the University or to undergraduates already enrolled of at least Second Class standing whose records show demonstrated qualities of leadership and character.*

BANK OF NOVA SCOTIA BILINGUAL EXCHANGE SCHOLARSHIPS. — Six annual one-year undergraduate and graduate awards are available, three to French-speaking candidates and three to English-speaking candidates. Undergraduate awards are for $1,500 tenable in the second to last year of a first university degree program. Graduate awards are for $3,000 and graduate students will be expected to outline their proposed programs of study. English-speaking winners may attend any Canadian French-speaking university or college and French-speaking winners may attend any

* Apply to Student Aid Office

Canadian English-speaking university or college provided it is a member, or federated with, or affiliated to, a member of the Association of Universities and Colleges of Canada. Apply to Director of Awards, Association of Universities and Colleges of Canada, 151 Slater St. Ottawa, Ont., K1P 5N1. Completed applications must be sent to the above address to arrive not later than March 1.

MARY H. BEATTY SCHOLARSHIPS & BURSARIES. — For men and women in any faculty or year.*

GORDON BENNETT MEMORIAL BURSARIES. — Established in 1969 to provide bursaries for men and women to assist them in obtaining higher education in any faculty. Awarded by the Student Aid Office on the basis of academic merit and financial need.

BIRKS FAMILY FOUNDATION STUDENT AID FUND. — Established in 1963 to be used for bursaries to worthy students in any faculty or year.*

B'NAI B'RITH HILLEL FOUNDATION BURSARY. — Established by the B'nai B'rith Hillel Foundation of McGill University, awarded to a deserving student in any faculty.*

B'NAI B'RITH MOUNT ROYAL LODGE No. 729 BURSARIES. — Three bursaries, open to men and women students in any faculty. Need and scholarship will determine the award.*

B'NAI B'RITH ST. LAURENT LODGE No. 2102 BURSARY. — Awarded from time to time to a deserving student in any faculty.*

MURRAY BROOKS MEMORIAL BURSARIES. — Established in 1962 by Mrs. John E. Gilbert in memory of her father to assist students in good standing, preferably students from India, Pakistan, or Ceylon.*

REVEREND G. O. BRUCE BURSARIES. — Established by the Reverend Guy Oliver Theodore Bruce in memory of his mother, Louisa Howard Bruce and of his brother, John C. Bruce. Awarded to one or two students who have financial need.*

KENNETH M. BURKE BURSARIES. — Established in 1946 by Dr. Hugh E. Burke in memory of his brother, the late Kenneth M. Burke. Open to men and women in any faculty, preference being given to sons and daughters of ministers of religion.*

MR. AND MRS. SAMUEL CAMPBELL BURSARY. — Established in 1972 by Mr. Barry Robert Campbell, B.A. 1971, in memory of his grandparents, Mr. & Mrs. Samuel Campbell. Awarded annually to a student, preferably studying in Honours English Literature or Political Science, on the basis of financial need.*

CANADIAN ARMY UNIVERSITY COURSE MEMORIAL BURSARY. — Established by the Canadian Army University Course Association of McGill University as a memorial to their comrades, Richard F. Gyles, Robert J. Lockhart, and James C. Wheeler, who lost their lives in World War II. Awarded by the Student Aid Office. Preference given to men who volunteered for active service, and their children.*

JOSEPH LAWRENCE CAPLAN MEMORIAL BURSARIES. — Awarded by the Principal on the recommendation of the Student Aid Office to First year students in any faculty who may be thereby helped to obtain a university education.*

CHILDREN OF WAR DEAD (EDUCATION ASSISTANCE) ACT. — Under this Act fees up to $500 and monthly allowances are provided for children of Canadian veterans whose death was attributable to military service in World War I or II. Apply to the nearest District Office of the Department of Veterans Affairs or to the Student Counsellor, Student Aid Office, McGill University.

WILLIAM JOHN DEY BURSARIES. — Bequeathed in 1950 by the late Mary Helena Dey in memory of her father, the Reverend William John Dey, M.A., D.D., (B.A.), Class of 1867, McGill University. Open to full-time undergraduates, both men and women, in all faculties and schools.*

STUART DUNN MEMORIAL SCHOLARSHIP. — Founded by the late Major Charles Gwyllym Dunn of Quebec City in memory of his son, Sergeant (Wireless Air Gunner) Stuart Dunn, R.C.A.F., a student at McGill University who died on active service in July, 1941. Preference given to a male student of the Protestant Christian faith whose home is outside the Island of Montreal. Consideration is given to: (a) the candidate's scholarship, character, personality, and quality of leadership, (b) his need of financial assistance, and (c) the general usefulness to the community of the special branch of study he proposes to follow.*

HENRY H. EKES BURSARY. — Established in 1971 by Mr. Peter B.G. Easton in memory of his late father, Mr. Henry H. Ekes, to provide an annual bursary to an academically deserving student with financial need.*

FAERMAN GRANT. — Established in 1964-65, awarded annually to a deserving student in any faculty or year.*

FEDERAL-PROVINCIAL LOANS AND BURSARIES. — Most Provinces join with the Federal Government in offering bursaries, loans, or bursary-loans to degree students in many faculties and schools, open to men and women on equal terms. Students who have been resident and domiciled in the Province of Quebec for one year should apply to the Student Aid Office, McGill University, for Registration cards, but not before May 1. Completed application forms must be received at the Service des Prêts et Bourses aux Etudiants in Quebec by September 30. For further particulars apply to the Student Aid Office.

* Apply to Student Aid Office

Ontario bursaries and loans are tenable in all faculties except Religious Studies. Students coming from other provinces should inquire from the Provincial Departments of Education whether they are eligible to participate in any comparable scheme. See Section 1.4, for addresses.

BOB FINEBERG BURSARY. — Established in 1967 by the family and friends in memory of the late Bob Fineberg and Barbara Greenspoon to assist a needy and deserving student. Awarded annually by the Student Aid Office with the approval of the National Council of Jewish Women on the basis of financial need and academic standing.*

FROTHINGHAM BURSARIES. — Bequeathed in 1951 by the late Mrs. Harriet F. Miller, to provide bursaries for outstanding women students in any faculty.*

AARON AND MARY GOODMAN BURSARIES. — Established in 1963 to assist deserving students in any faculty.*

DR. WILLEM GRAFF BURSARY. — Established by Dr. R.W. Brockway of Brandon College to commemorate Professor Willem Graff's long service to the University. Awarded by the Student Aid Office on the recommendation of the Department of German to a worthy and deserving undergraduate or graduate student on the basis of scholarship and financial need.

BARBARA GREENSPOON BURSARY. — Awarded annually by the Student Aid Office to any student with preference given to a student with a penchant for Mathematics.*

H.E. HERSCHORN BURSARY. — Established under the will of the late H.E. Herschorn, N.P., B.A. 1911, B.C.L. 1914, for a deserving student, man or woman, studying for the B.Sc., B.A., M.D., C.M., LL.B., or B.C.L. degree in the intermediate or any subsequent year of his or her course.*

HEWITT MEMORIAL BURSARY FUND. — A bequest from the late Frederick T. O'Reilly-Hewitt in memory of his parents, the late Frederick Daniel Hewitt and the late Maria Stenson Hewitt for bursaries. Open to students in the Faculty of Arts or to students in the Humanities and Social Sciences in the Faculty of Graduate Studies and Research. Awarded by the Student Aid Office on the basis of financial need and academic promise.*

M.A.U.T. — F.S. HOWES AWARD. — Established in 1964 by the McGill Association of University Teachers to mark the great contribution of Dr. F.S. Howes to the life of the University. Awarded by the Student Aid Office to assist a student of energy and promise who is in financial need to complete his studies. Preference is given to students in the Faculty of Graduate Studies and Research.*

HUDSON'S BAY COMPANY SCHOLARSHIP. — Open to outstanding students of Indian or Eskimo background to enable them to attend University. Further information may be obtained from the Student Counsellor, Student Aid Office.

CELIA AMDUR ISAACS MEMORIAL BURSARY. — Established in 1953 by the Montreal Section of the National Council of Jewish Women and Mr. I. Sydney Isaacs. Awarded by the Council upon the recommendation of the Student Aid Office.*

JOSEPH ALFRED JACOBSON MEMORIAL SCHOLARSHIP. — Established by the late Mr. Percy N. Jacobson and by Mrs. Jacobson in memory of their son, Flight-Sergeant Joseph Alfred Jacobson, of the Royal Canadian Air Force, who was killed in action on January 28, 1942. Open to men and women in any faculty on equal terms. Awarded on the basis of academic strength, interest in university sports, and financial need.*

KHAKI UNIVERSITY AND Y.M.C.A. MEMORIAL SCHOLARSHIP FUND. — The interest of this fund is awarded in scholarships subject to the following two conditions: (i) that the scholarships may be held only by undergraduates; (ii) that the preference is given to sons and daughters of soldiers: (a) who served in the war of 1914-18; (b) who served in the war of 1939-45.*

EMERY AND ERWIN KLINEMAN BURSARY. — Established by Mr. Myer Herschorn to provide bursaries for students in any faculty needing financial assistance to continue their studies.*

SARAH AND JOSEPH LAZARUS BURSARY. — Awarded to a student in financial need with satisfactory academic standing, preference being given to a student in the Program of Jewish Studies.*

FELIX LEOPOLD BURSARY. — Established in 1953 by Mr. Felix Leopold of Montreal and awarded to one or more needy students in any faculty, who must have a satisfactory academic record and be of good character.*

RAE AND JACK LEVY MEMORIAL BURSARY FUND. — Established in 1975 from the estate of Mrs. Rae Levy who died June 23, 1974. The revenues from this fund shall be used to aid deserving students in need. Tenable for one year.*

BELLA LIPKIN-COHEN MEMORIAL BURSARY. — Established in 1972 by Mr. Sydney Brown, and awarded annually to a needy student, preferably in the Faculty of Arts.*

NOURALLA LUTFY MEMORIAL BURSARIES. — Two bursaries, the bequest in 1958 of the late Mr. Nouralla Lutfy and a further donation from his son, Mr. John Lutfy. Awarded to deserving students in any faculty or school.*

CHARLES MARTIN BURSARY FUND. — Bequeathed in 1935 by the late Mrs. Lillie F. Martin in accordance with the wishes of her late husband, Alfred W. Martin, in memory of his father, Charles

* Apply to Student Aid Office

Martin. Awarded to students in any faculty on the basis of financial need.*

McGILL PHARMACY ALUMNI SOCIETY DR. WILLIAM H. HATCHER BURSARY. — Established in honour of Dr. William H. Hatcher. Open to deserving students. Preference given to initial or intermediate year B.A. or B.Sc. degree students who intend to study pharmacy after graduation and to students in the Department of Chemistry.*

McGILL STUDENT ENTREPRENEURIAL AGENCIES INC. BURSARY. — Established in 1970 to provide a bursary of at least $100 annually to a student who has financial need.*

McGILL U.N.T.D. BURSARY. — With the unification of the three branches of the armed services, the U.N.T.D. has ceased to exist. The income from this Fund is now used to supplement university bursary funds.*

J. R. S. McLERNON BURSARY FUND. — Endowed by the late Mr. J. R. S. McLernon to assist students with financial need and good academic standing. Open to students in any faculty or year who are Canadian citizens. The minimum amount of each award is $100.*

GEORGE J. McMANUS MEMORIAL SCHOLARSHIPS. — Each has a minimum value of $100 and may be held by students who hold other scholarships and who have real financial need. Open to men or women in any year of any faculty who have high academic records and need financial help. The actual amount depends on the need of the student.*

NATHAN MENDELSSOHN BURSARIES. — A bequest of $10,000 from the estate of the late Nathan Mendelssohn, the annual income of which is to be used by the Student Aid Office for bursaries for students in need of financial assistance.*

DR. FREDERICK WILLIAM CHARLES MOHR SCHOLARSHIPS. — The income from a fund established under the will of the late Dr. F.W.C. Mohr is used for scholarships for needy students from communities within the Ottawa Valley District, the amount of each scholarship not exceeding $500 to any one student in any year.*

MONTREAL WOMEN'S CLUB ELIZA REID MEMORIAL BURSARY.

NATIONAL COUNCIL OF JEWISH WOMEN OF CANADA, MONTREAL SECTION, BURSARIES. — A limited number of bursaries valued normally at $100 each. Awarded by the Council after consultation with the Student Aid Office. Academic standing and financial need are considered in making the award. Although there is no legal obligation, the Council hopes that holders will, if possible, return the money at some future time so that other students may in their turn be helped through college.*

EDGAR R. PARKINS MEMORIAL SCHOLARSHIPS AND BURSARIES.

SAMUEL AND BESSIE PESNER BURSARY. — Established in 1967 to honour Mr. and Mrs. Pesner. Awarded annually by the Student Aid Office with the approval of the National Council of Jewish Women to a student in any faculty or year on the basis of financial need and academic standing.*

PROCTER & GAMBLE STUDENT BURSARY FUND. — The Procter & Gamble Company of Canada Limited has established a fund of $1,500 to assist needy students in any faculty or year who are of good academic standing. Recipients will normally be Canadian residents who expect to maintain permanent residence in Canada. The minimum award is $100 and may be held concurrently with other awards. The Company hopes that any student who benefits from the fund will later contribute to the general bursary funds of the University when financially able to do so.*

HELEN REYNOLDS BURSARY.

MURIEL V. ROSCOE BURSARY.

ST. ANDREW'S SOCIETY BURSARY. — Established by the St. Andrew's Society of Montreal, for a needy student, preferably of Scottish blood, proceeding to a degree.*

JENNIE & JOSEPH SALOMON MEMORIAL BURSARY. — Established by the children of Mr. & Mrs. J. Salomon in their memory. Awarded annually to a deserving student in need who has completed his or her final undergraduate year in the Faculty of Arts or Science, and is entering a graduate program. Tenable for one year.*

RAY AND BEN SCHECTER MEMORIAL BURSARY. — Established by Mr. Samuel H. Schecter in memory of his mother and father. While open to any needy student in any faculty preference shall be given to students from Africa or Asia.*

SERAINE GROUP IDA SEGAL MEMORIAL BURSARY. — Established in 1968 to assist needy men students in any faculty.*

SERAINE GROUP ESTHER WARD MEMORIAL BURSARY. — Established in 1956 to assist needy men students in any faculty.*

FREDERICK SOUTHAM KER BURSARY. — Established in 1941 by the late F.N. Southam in memory of his grandson, Frederick Southam Ker, who was killed in action on September 6, 1940. Open on equal terms to men and women of all faculties. Awarded to a student who gives promise of becoming a good citizen but is handicapped by lack of funds. Financial need, character, and academic record are all considered in making the award.*

* Apply to Student Aid Office

TEMPLE EMANU-EL SISTERHOOD BURSARY. — Established in 1946 in memory of the men who lost their lives in the war of 1939-45. Open to men undergraduates in all faculties.*

UNIVERSITY BURSARIES. — Open to full-time degree course students in all faculties and schools. See general regulations in Section 1.3.

UNIVERSITY CHALLENGE BURSARY FUND. — Established in 1971 by $10,000 which was won by a McGill team comprised of Julius H. Grey, B.C.L. 3, William W. Kredentser, B.Sc. 3, Brian M. Shecter, B.A. 4, and Mrs. Faith E. Wallis, B.A. 4, who participated in the CTV Television Program "University Challenge". The annual income is to provide bursaries to academically deserving students with financial need.*

UNIVERSITY SCHOLARSHIPS. — After one year at McGill, University Scholarships may be awarded by the University Scholarships Committee to students in any year of any undergraduate faculty for exceptionally distinguished work in the University examinations. No application is required.

University Scholarships carry a nominal recognition ($100) of their outstanding achievement. Where there is financial need, however, winners should apply as soon as possible to the Student Aid Office for information and consideration.

Two University Scholarships have special names, the JAMES ECCLES SCHOLARSHIP, tenable in any year of any faculty, and the FREDERICK SMITH MEMORIAL SCHOLARSHIP, tenable only in the Faculty of Medicine.

All University Scholarships are renewable if, in the opinion of the University Scholarships Committee, the holders maintain a sufficiently high academic standing for scholarship recognition.

IBM THOMAS J. WATSON MEMORIAL BURSARIES. — $1,000 annually, established by the International Business Machines Company Limited for financial assistance to needy undergraduates in any year of any faculty who are of good academic standing. May be held concurrently with other awards provided need exists.*

EDGAR WILSON AND MARGARET WILSON SCHOLARSHIPS. — Bequeathed in 1956 by the late Edgar Moles Wilson to provide the Edgar Wilson Scholarships to men and the Margaret Wilson Scholarships for women to assist them in obtaining higher education in any faculty. Awarded on the basis of academic merit and financial need. Awards will not exceed the annual tuition fees.*

WOLCOTT BURSARY FUND. — Bequeathed in 1974 by the late Mrs. Anna D'Aeth (née Wolcott) to provide an annual scholarship or bursary for some needy student born in the West Indies.*

ROY M. WOLVIN MEMORIAL BURSARIES.

WOMEN ASSOCIATES OF McGILL BURSARY. — Available each year to men and women students in any faculty. Scholarship and need determine the award. The winner is chosen by the Executive of the Women Associates of McGill from candidates recommended by the Student Aid Office and selected from the applicants for University bursaries.*

RICHARD WOOD MEMORIAL BURSARY. — An annual fund established in 1964 by the Laurentian Lanes Sportsman's Bowling League for deserving students in any faculty.*

Prizes

DR. W.B. LEWIS PRIZE. — A prize of $300 is offered annually in a competition for an essay, written with a view to publication to produce an informative review of some topic of his choice involving more than a single scientific discipline and having relevance to a subject of potentially general concern, e.g. water pollution, growing amount of carbon dioxide in the atmosphere, etc. Open to undergraduates and graduate students of the University. Material should be carefully selected and properly presented. The judges will not read untidy manuscripts or newspaper clippings. Essays that have appeared in print are not ineligible if they have been published since March 1, 1976. No candidate may submit more than one entry, which must be typed and must reach the Secretary, University Scholarships Committee, Scholarships Office, before March 3, 1977. Winning entries will be retained by the University and filed in the McLennan Library. The competition is restricted to students who have not previously won this Prize. Awarded by the University Scholarships Committee.

CHESTER MACNAGHTEN PRIZES. — Two prizes, $125 and $50, offered annually in a competition for the best piece of creative writing in English submitted by an undergraduate student of the University, i.e., a story, a play, a poem, an essay, etc. Material should be carefully selected and properly presented. The judges will not read untidy manuscripts or a large number of newspaper clippings. Printed compositions are not ineligible if they have been published since March 1, 1976. No candidate may submit more than two entries, which must be typed and must reach the Secretary, University Scholarships Committee, Scholarships Office, before March 3, 1977. Winning entries will be retained and filed in the McLennan Library. The competition is restricted to students who have not previously won the First Prize. Awarded by the University Scholarships Committee.

McCHARLES PRIZE.

NEWCOMEN AWARD.

* Apply to Student Aid Office

Loan Funds

BURNSIDE STUDENT LOAN FUND. — A Student Loan Fund established to assist needy students in all Faculties.*

CANADA STUDENT LOAN PLAN. — Canadian students from provinces other than Quebec may apply for federal loans. Addresses for the nine provincial authorities administering this plan are listed in Section 1.4.

CANADIAN CLUB OF MONTREAL FIFTIETH ANNIVERSARY STUDENT AID FUND. — Established in November 1955 to commemorate the Club's Fiftieth Anniversary. The purpose is to foster patriotism by encouraging the study of the institutions, arts, literature, and resources of Canada, and the appreciation of matters of interest and concern to Canadians.*

BERTHA COHEN REVOLVING LOAN FUND. — Established to provide small, short-term loans to aid students in emergencies in any faculty. Administered by the Student Aid Office.

MR. AND MRS. HENRY COHEN REVOLVING LOAN FUND. — Established in 1967 to mark the thirtieth wedding anniversary of Mr. and Mrs. Henry Cohen by their son, Mr. Howard T. Cohen, B.Com. 1961, and their son-in-law, Mr. Philip Goldsmith. Unrestricted.*

AMY FREEDMAN MEMORIAL LOAN FUND. — Established in 1968 by the parents and friends of the late Amy Freedman for the purpose of making emergency loans to needy students (already in course at McGill) in any faculty. Special consideration will be given to students who come from and are returning to developing countries.*

HERSCHORN LOAN FUND. — Established by the late Mr. H.E. Herschorn for the purpose of making loans to students in any faculty who would otherwise be unable to continue their studies.*

BERTRAM KIDD AND MARJORIE SHARP MEMORIAL LOAN FUND. — Established in 1968 by parents and friends in memory of Bertram Kidd and Marjorie Sharp and is available to any McGill students.*

J. B. LYNCH LOAN AND BURSARY FUND. — Established by Mr. J. B. Lynch, President of Siscoe Mines Limited, for loans or in some cases outright grants to needy students.*

JOHN HAROLD MacLAREN STUDENT LOAN FUND. — Established in 1965 by a bequest from the late John Harold MacLaren.*

MARTLET FOUNDATION LOAN FUND. — Established in 1954 by the Martlet Foundation for students with good academic standing and athletic ability who are in need of financial assistance. Apply to the Director of Athletics.

MRS. M. DOROTHEA MILLAR LOAN FUND. — Established in 1956 to assist one or more students of either sex, graduate or undergraduate, to pursue studies or research at McGill.*

J. K. PRATT MEMORIAL LOAN FUND. — Established in 1952 in memory of the late Janetta K. Pratt who was Cashier at McGill from 1929 until her death in 1952.*

ROTARY CLUB OF OTTAWA STUDENT LOAN FUND. — For intermediate and final year students in any faculty, residents of Carleton County, Ontario, and attending universities throughout Canada. Annual loans will not exceed $250.*

ROYAL CANADIAN AIR FORCE BENEVOLENT FUND. — Students who served in the R.C.A.F. are eligible for assistance from this Fund which makes loans or outright gifts, depending on the special circumstances involved.*

HAROLD N. SEGALL LOAN FUND. — A donation in 1957 from the Jerry Segalls to assist deserving students in any faculty.*

STUDENTS' SOCIETY LOAN FUND. — Open to students in all faculties with good academic standing. Primary consideration given to the candidates' contributions to Students' Society activities.*

GEORGE E. TILLSON LOAN FUND. — Established in 1955 by Mr. George E. Tillson. Unrestricted.*

UNIVERSITY LOAN FUND. — A Student Loan Fund established to assist needy students in all Faculties. Loans are made normally only to students in upper years with good academic standing.*

GWYN WILLIAMS MEMORIAL LOAN FUND. — Established by friends and members of staff of McGill University in memory of Gwyn Williams in recognition of her many years of loyal and efficient service in the Administration Offices of McGill University.*

Open to Students in Agriculture

See MACDONALD COLLEGE ANNOUNCEMENT.

Open to Students in Architecture

ISABELLA McLENNAN BURSARY AND LOAN FUND.

Open to Students in Arts or Science

.McGILL SOCIETY OF ONTARIO LOAN FUND.

Open to Students in Dentistry

See FACULTY OF DENTISTRY ANNOUNCEMENT.

* Apply to Student Aid Office

Open to Students in Faculty of Education

NATIONAL COUNCIL OF JEWISH WOMEN LOAN FUND.
PROVINCIAL ASSOCIATION OF PROTESTANT TEACHERS LOAN FUND.
ST. GEORGE'S LOAN FUND.
STUDENT TEACHERS' SOCIETY LOAN FUND.

Open to Students in Engineering

BENNETT EDUCATIONAL FUND.
CANADIAN INSTITUTE OF MINING AND METALLURGY MONTREAL BRANCH LOAN FUND.
FAIRBAIRN LOAN FUND.
GEORGE HENRY FROST FUND.
BERNARD LEVITON LOAN FUND.
MONTREAL WOMEN'S AUXILIARY OF THE CANADIAN INSTITUTE OF MINING AND METALLURGY LOAN FUND.
SCIENCE '25 MEMORIAL LOAN FUND.
WADDELL LOAN FUND.
WICKENDEN LOAN FUND.

Open to Students in Law

See FACULTY OF LAW ANNOUNCEMENT.

Open to Students in Management

COMMERCIAL SOCIETY LOAN FUND.
MORTON J. WHITE LOAN FUND.

Open to Students in Medicine

See FACULTY OF MEDICINE ANNOUNCEMENT.

Open to Students in Music

GLADYS GLASSCO MEMORIAL LOAN FUND.

Open to Students in the School of Nursing

KELLOGG FOUNDATION LOAN FUND.

Open to Students in Social Work

BERLINER STUDENT LOAN FUND.
PI BETA PHI LOAN FUND.
SOCIAL WORK ALUMNI LOAN FUND.
SOUTHAM STUDENT LOAN FUND.

Restrictive Funds

McGill University no longer accepts endowments for awards which are restrictive in certain respects. However, there are some such funds endowed in the past which are still available.

Students who complete in detail the application form for financial aid, obtainable from the Student Aid Office, will be considered automatically. The funds which are restrictive are the following:

GREEK STUDENTS BURSARY AND LOAN FUND. — Established in 1952 by a group of Greek merchants to assist Greek students attending McGill.

SIMON AND ROSALIE HALPERN MEMORIAL SCHOLARSHIP. — Value $400, established by the late Dr. Fanny G. Halpern in memory of her parents. Open to students of Roman Catholic or Jewish faith, on the basis of distinguished academic standing and financial need. The holder in any one session may re-apply for the following year.*

ANNETTE S. HILL MEMORIAL BURSARIES. — Established in 1962 to assist young men of the Protestant faith and of good character from the Maritime Provinces or the Province of Ontario to obtain a college education.

HUNGARIAN CANADIAN ENGINEERS' ASSOCIATION BURSARY. — Students of Hungarian origin, who have had at least one year of successful study at a recognized university in Canada, may apply to the Hungarian Canadian Engineers' Association for financial aid.

McGILL HELLENIC CLUB BURSARIES. — One or more bursaries of $300 each for students of Greek descent (up to and including the third generation) in any faculty or year. Open to full-time students who have obtained second class standing and have financial need, and renewable upon application.

ANGUS McCOY SMITH SCHOLARSHIP. — $150, founded by the late Mr. Allan L. Smith and Mrs. Smith in memory of their son, Angus McCoy Smith, a McGill graduate, who was killed in World War II. Awarded to a Protestant male student of the Faculty of Arts or Science entering the Final year. Academic record, character, financial need, and general promise are considered.

CHARLES WILLIAM SNYDER MEMORIAL SCHOLARSHIPS. — Two scholarships of $200 each, founded by the late L. P Snyder, Esq., in memory of his son, Charles William Snyder, a student of First year Arts who was killed in the Battle of Sanctuary Wood on June 2, 1916, awarded on the results of the sessional examinations. One is awarded on the recommendation of the Department of English to a student entering the Final year and taking full Honours in English and the other is awarded on the recommendation of the Departments concerned in the student's combined Honours program to a student entering the Final year and taking Honours in English and another subject. Open to Christian male students in the Faculty of Arts or Science.

SYRIAN CANADIAN ASSOCIATION BURSARIES. — A bursary fund available to any student of Syrian-Lebanese descent residing in (a) the Greater Montreal area; (b) the Province of Quebec; (c)

* Apply to Student Aid Office

Canada; with preference given to students in the above order. No restriction as to choice of faculty or year but preference is given to students entering the University. Awarded on the basis of good academic standing and financial need. The maximum amount granted to any one student is the equivalent of the student's tuition fees and the amount granted varies with the financial need of the student.

UNIVERSITY LODGE LOAN FUND. — A loan fund for Masons and the children of Masons attending McGill, established by University Lodge No. 84 Q.R., A.F. and A.M. Loans will not exceed annual tuition fees. Open to qualified students in all faculties and years and awarded on need and academic merit.

3.2 Open To Students In The Faculty Of Arts

For Entrance Scholarships, see Section 2.1. For scholarships and bursaries, open to undergraduates in all Faculties, see Section 3.1.

General Regulations in Arts

1. No applications are required. The awards are made by the Arts Scholarships Committee on the basis of examination standings.
2. Unless restricted by the deed of gift or faculty regulations the awards are open to all students studying for the B.A. degree.
3. Normally only those students who have completed at least 30 credits in the academic year preceding the award will be eligible for scholarships.
4. Scholarships will be awarded only if an adequate standard is attained for scholarship recognition.
5. If in any university year there is not a sufficient number of candidates showing adequate merit, any one or more of the scholarships offered for competition may be given to more deserving candidates in another year.
6. In order to retain a scholarship a successful candidate must proceed regularly with a university course to the satisfaction of the Faculty.

Scholarships

CHARLES ALEXANDER SCHOLARSHIP. — Value $245, established in 1870 "for the encouragement of the study of Classics and other subjects."

MARGARET JANE ALLAN SCHOLARSHIP. — Bequeathed in 1929 to the Royal Victoria College by Mrs. Agnes W. Allan. Value $450, awarded annually to the woman student with the highest standing in the sessional examinations of the initial year of the B.A. course.

DR. BARCLAY SCHOLARSHIP. — Awarded in the Classics Department, value $140.

EDMUND HENRY BOTTERELL AWARDS. — See Section 4.

ROBERT BRUCE SCHOLARSHIP. — $100, tenable for two years, bequeathed by the late Robert Bruce, of Quebec City. Open to students in the Faculty of Arts, the Faculty of Science or the Faculty of Management and awarded for high standing in the examinations at the end of the initial year. Awarded by the University Scholarships Committee upon recommendations of the faculties concerned.

MARION McCALL DALY AWARD. — See Section 4.

DOW-HICKSON SCHOLARSHIPS. — Annual value, not less than $1,000 each. Established in 1957 by a bequest from the late Dr. J. William A. Hickson and awarded to students entering the penultimate or the final year of the Honours courses in English Literature, Philosophy or Psychology. Awarded by a joint committee of the scholarships committees of the Faculties of Arts and of Science upon the recommendations of the departments concerned.

GENERAL MOTORS SCHOLARSHIPS. — Established by General Motors Corporation of Canada and open to outstanding young Canadian men or women. One scholarship is awarded annually in the form of a two-year award of $1,000 per year by the University Scholarships Committee upon the recommendations of the departments concerned. Open to students who in the fall will enter the penultimate undergraduate year of a program of studies leading to a degree in Engineering, Commerce or Economics. Should a holder withdraw or fail to maintain a satisfactory standing the scholarship may be awarded to another qualified candidate of the same class.

MAURICE GOLDENBERG MEMORIAL SCHOLARSHIP. — Value $225, in Government, Constitutional Law, or Public Administration, established by Senator H. Carl Goldenberg, Q.C. in memory of his father, the late Maurice Goldenberg. Awarded annually by the University Scholarships Committee to the best candidate amongst those nominated by the Faculty of Arts and the Faculty of Law.

GREENBLATT SCHOLARSHIP. — $500 from a bequest of the late Mrs. Greenblatt, for a student proceeding from the intermediate year(s) to the final year, preference given to a student in Modern Languages (other than English) or in History. Awarded on recommendation by a committee selected from the Departments of History and of the Modern Languages.

ITALIAN GOVERNMENT SCHOLARSHIPS. — Awarded to students in the Department of Italian for summer study in Italy. Open only to Canadian citizens. Apply to the Department of Italian.

KNIGHTS OF PYTHIAS SCHOLARSHIP. — $300, awarded annually to a male or female student in the

Social Sciences who must be a resident of the Island of Montreal, and entering the intermediate year of the B.A. course. May be renewed for a further year if the holder proves worthy.

HANNAH WILLARD LYMAN MEMORIAL SCHOLARSHIP. — $240, awarded annually to a woman student of the intermediate or final year of the B.A. course.

SIR WILLIAM MACDONALD SCHOLARSHIPS. — Two scholarships of $500 each, open to all students in the intermediate and final years.

ALEXANDER MACKENZIE SCHOLARSHIPS. — Two scholarships of $250 each, awarded on the results of the Honours examinations in Political Science. One award will be held by a student entering the final year and one by a student entering the intermediate year. Students must take the Honours work in Political Science.

JAMES DARLING McCALL SCHOLARSHIP. — $750 founded by the late J.T. McCall, Esq., in memory of his son, James D. McCall, B.Sc., who was drowned shortly after the war of 1914-18, in which he served with distinction. Awarded to a male student entering the final year who is taking Honours in English and/or Philosophy.

McGILL ALUMNAE GEORGINA HUNTER SCHOLARSHIP. — Established in memory of the late Georgina Hunter, a member of the first graduating class of women at McGill University, the first President of the Alumnae Society, and a former Principal of the High School for Girls, Montreal. Awarded annually to a distinguished woman student, the scholarship has a maximum value usually not exceeding $500 and a minimum value of $100. The honorary $100 is awarded automatically and if further supplementary scholarship assistance is required, the winner of the Scholarship is asked to consult the Student Aid Office.

McGILL ALUMNAE ETHEL HURLBATT SCHOLARSHIP. — Established in memory of the late Miss Ethel Hurlbatt, a former Warden of the Royal Victoria College. Awarded annually to a distinguished woman student, the Scholarship has a maximum value usually not exceeding $500 and a minimum value of $100. The honorary $100 is awarded automatically and if further supplementary scholarship assistance is required, the winner of the Scholarship is asked to consult the Student Aid Office.

McGILL ALUMNAE CATHERINE I. MACKENZIE SCHOLARSHIP. — Established in memory of the late Miss Catherine I. Mackenzie, B.A. 1904, former Principal of the High School for Girls, Montreal. Awarded annually to a distinguished woman student, the Scholarship has a maximum value usually not exceeding $500 and a minimum value of $100. The honorary $100 is awarded automatically and if further supplementary scholarship assistance is required, the winner of the Scholarship is asked to consult the Student Aid Office.

McGILL ALUMNAE ISABELLA McLENNAN SCHOLARSHIP. — Established in memory of the late Miss Isabella McLennan. Awarded annually to a distinguished woman student, the Scholarship has a maximum value usually not exceeding $500 and a minimum value of $100. The honorary $100 is awarded automatically and if further supplementary scholarship assistance is required, the winner of the Scholarship is asked to consult the Student Aid Office.

McGILL ALUMNAE SUSAN CAMERON VAUGHAN SCHOLARSHIP. — Established in honour of the late Mrs. Walter Vaughan, a former Warden of the Royal Victoria College. Awarded annually to a distinguished woman student, the Scholarship has a maximum value usually not exceeding $500 and a minimum value of $100. The honorary $100 is awarded automatically and if further supplementary scholarship assistance is required, the winner of the Scholarship is asked to consult the Student Aid Office.

MOYSE TRAVELLING SCHOLARSHIPS. — Founded by the late Right Honourable Lord Atholstan, to commemorate the "splendid services of Dr. Charles E. Moyse, for forty-two years Professor of English, during sixteen of which he was Dean of the Faculty of Arts and Vice-Principal of the University." Two scholarships, normally of $2,000 each tenable for one year. One scholarship to be awarded by the Faculty of Arts for distinction in literary subjects and the other by the Faculty of Science for distinction in scientific subjects.

In the absence of applicants of sufficient merit in either of the faculties, applications from final year students in, or graduates of, other faculties of the University may be considered.

If there is no winner in one of these faculties, both scholarships may be awarded to applicants in the other faculty. Holders must devote the year of tenure to advanced study, preferably in a British or European university, but not to the exclusion of other institutions approved by the Faculty of Arts or of Science. Applications, whether from graduates or from students in the final year of the undergraduate course, should reach the Dean of the Faculty of Arts or of Science not later than April 1. Applications should be accompanied by:

(1) the names of two referees who are familiar with the applicant's work;
(2) a detailed and comprehensive statement of the applicant's proposed course of study; the institution or centre at which he, or she, proposes to study;
(3) a statement of the applicant's age and nationality.

Awards will be made after the results of final examinations in the final year of the undergraduate course have been determined.

ALLEN OLIVER FELLOWSHIP IN ECONOMICS. — Present value about $1,000. Established by Mrs. Frank Oliver, of Edmonton, Alta., in "proud and loving memory of her son, the late Allen Oliver, M.C., B.A., Lieutenant, 26th Battery, C.F.A., who was killed in action at the Somme on November 18, 1916." Lieutenant Oliver was an honour graduate in 1915 in the Department of Economics and Political Science. Awarded to the student who stands highest in first class honours in the Departments of Economics and Political Science at the final B.A. examination, and the holder is required to pursue his studies in Economics and Political Science at McGill or elsewhere. No application is required.

PETERSON MEMORIAL SCHOLARSHIPS IN CLASSICS. — Two scholarships of $550 each, founded in memory of Sir William Peterson, Principal of McGill 1895-1918, by his son, W.G. Peterson, M.A. Open to students in any year.

PRINCE OF WALES SCHOLARSHIP. —$150, open to students proceeding from the intermediate year(s) into the final year. Awarded for general distinction by the Faculty of Arts on the student's complete academic record and on recommendations from departments in which they have taken their courses.

JANE REDPATH EXHIBITION. — Value $170, founded by the late Mrs. Redpath, to maintain an exhibition in Arts or Science. Awarded on the results of the sessional examination of the initial year to the student with the highest average on the year's work. Awarded by a joint committee of the scholarships committees of the Faculties of Arts and of Science upon the recommendations of each faculty.

REFORD SCHOLARSHIP. — The interest on this fund, about $400 per annum, is equally divided and placed at the disposal of the Departments of English and Philosophy.

BARBARA SCOTT SCHOLARSHIP. — Value $275, bequeathed by the late Barbara Scott for the student "excelling in Classics in the initial year."

SHAKESPEARE SCHOLARSHIP. — $100, for a student advancing to the final year with special distinction in English Honours courses. Awarded by the Faculty of Arts on the recommendation of the Department of English.

UNIVERSITY SCHOLARSHIPS. See Section 3.

ROY M. WOLVIN MEMORIAL SCHOLARSHIPS AND BURSARIES. — Two scholarships of $375 each and a number of bursaries are given by Mrs. Roy M. Wolvin in memory of her husband. One scholarship is restricted to men undergraduates in the Faculty of Engineering, which is awarded by the Faculty Scholarships Committee. The other scholarship is restricted to women undergraduates in the Faculty of Arts, the Faculty of Science, or the Faculty of Management, and is awarded by the University Scholarships Committee upon recommendations of the faculties concerned. The bursaries are open to students in any undergraduate faculty who have a good academic record and need financial assistance. Apply for bursaries to the Student Aid Office.

Bursaries

ROBERT BRUCE BURSARIES. — Several bursaries of $100 each are open each year to "young men and women of promising abilities but of straitened circumstances in Arts, Science, or Engineering."*

MR. AND MRS. SAMUEL CAMPBELL BURSARY. — See Section 3.1.

DELTA PHI EPSILON SORORITY BURSARY. — Value $100, founded in memory of Edith Silver. Open to a deserving woman student entering the penultimate year of the Faculty of Arts or of Science.*

ROSE AND HARRY ENGELS BURSARY. — $100 to be awarded annually by the Student Aid Office to any undergraduate B.A. student in the Faculty of Arts.*

HEWITT MEMORIAL BURSARY FUND. — See Section 3.1.

HOUSTON BURSARY. — See Section 3.13.

HON. ROBERT JONES BURSARY. — One or more bursaries not exceeding $250 each in any one year are granted to needy students in the Faculty of Arts, Science or Engineering.*

BELLA LIPKIN-COHEN MEMORIAL BURSARY. — See Section 3.1.

Prizes

AUSTRIAN GOVERNMENT PRIZE. — A book prize for a student who has excelled in German.

HARRY BARKER MEMORIAL PRIZE IN ENGLISH. — Value $150, bequeathed by the late Miss Dinah Lee in memory of the late Mr. Harry Barker, awarded to the student with the highest standing in English in an initial year. Awarded on the recommendation of the Department of English by whichever Faculty Scholarships Committee is appropriate.

NORMAN BERMAN MEMORIAL PRIZE. — Established in 1973 by Mr. & Mrs. Joseph Berman. An annual $225 prize or prizes will be awarded to students for: 1) Excellence in the field of Judaic Studies. 2) A critical study in the field of Hebrew or Yiddish language and literature or a translation of an important work of Hebrew or Yiddish literature into English or French. Awarded by the Scholarships Committee of the Faculty of Arts upon the recommendation of the Chairman of the Jewish Studies Program.

* Apply to Student Aid Office

HENRY CHAPMAN PRIZE. — A prize of the value of $65 is given in Modern Languages (excluding English), or in Hebrew.

CHERRY PRIZES. — Two prizes of $100 each, founded by Wilbur H. Cherry, Arts 1907, and Anna Cherry, Arts 1918, in memory of their father, William Cherry, Med. 1869, and of their brother, William McFie Cherry, Arts 1911, awarded on the recommendation of the Departments of Economics or of Political Science to deserving students.

OSCAR EKES MEMORIAL PRIZE. — Value $100, established in 1972 by Mr. Peter B.G. Easton, B.A. 1971, in memory of his uncle, Mr. Oscar Ekes. Awarded by the Scholarships Committee of the Faculty of Arts on the recommendation of the Department of Economics to an outstanding economics student.

ISIDORE FINKELSTEIN PRIZE. — Value $100, established in 1973 for a five-year period by Mrs. I. Finkelstein in memory of her late husband, Isidore Finkelstein. Awarded annually by the Scholarships Committee of the Faculty of Arts on the recommendation of the Department of History to the full honours history student graduating with the highest mark.

DORA FORSYTH PRIZE. — $125, bequeathed by the late Miss Jeanie Forsyth for English Literature. Open to women students only and awarded to a candidate recommended by the Department of English and approved by the Faculty of Arts.

FRENCH GOVERNMENT'S BOOK PRIZES. — Three book prizes to be awarded to three students of the Department of French Language and Literature in their graduating year for excellence in the study of French Language and Literature.

GERMAN EMBASSY PRIZE. — A book prize for excellence in German.

PRIZE IN ANCIENT GREEK. — One or more prizes with a minimum value of $100 each may be awarded annually for proficiency in Ancient Greek to students entering any year of the Faculty of Arts.

HISTORICAL SOCIETY'S PRIZE. — A prize of $50, awarded jointly by the Executive of the Historical Society and the Chairman of the Department of History to the undergraduate in the initial year showing the greatest promise in History and intending to read for Honours in this subject.

MADELENE HODGSON PRIZE IN HISTORY. — Value $40, endowed by the I.O.D.E. in recognition of the work done by the late Mrs. W.C. Hodgson as President of the Provincial Chapter of Quebec. Awarded to the intermediate year Honours student in History by the Department of History for the most outstanding work in this subject.

PRIZE IN LATIN. — One or more prizes with a minimum value of $50 each may be awarded annually for proficiency in Latin to a student or students in any year of the Faculty of Arts. Awarded by the Faculty of Arts on the recommendation of the Chairman of the Department of Classics.

DR. W.B. LEWIS PRIZE. — See Section 3.1.

CHESTER MACNAGHTEN PRIZES. — See Section. 3.1.

McGILL HELLENIC CLUB PRIZE IN MODERN GREEK. — An annual prize of $150 to the student obtaining the highest overall first class standing in the first years of study of Modern Greek.

BORIS MUSKATOV PRIZE IN PSYCHOLOGY. — An annual prize of $85 has been endowed by Miss Serafina Muskatov in memory of her brother, Boris Muskatov, who died on January 9, 1948, while a student. This prize is offered to a student who has completed the penultimate year in the Faculty of Arts or of Science and has done the best work in the subject of Psychology. Awarded on the recommendation of the Department of Psychology by whichever faculty scholarships committee is appropriate.

NEWCOMEN AWARD. — The Newcomen Society in North America offers a prize of $200 known as the Newcomen Award for a student at McGill who writes an outstanding paper on some facet of Industrial History. Entries must be submitted to the Chairman of the Department of Economics on or before April 1.

SUSAN PELLETIER MEMORIAL PRIZE IN PSYCHOLOGY. — Value $100, established by her classmates in memory of Susan Pelletier, an honours student in psychology who died as the result of an accident. To be awarded to a student on conclusion of the penultimate year of the Psychology Honours Program. The award is to be made by the Faculty of Arts or Science Scholarships Committee, whichever is appropriate, on the recommendation of the department.

PETERSON MEMORIAL PRIZE IN ENGLISH LITERATURE. — Value $50, founded by W.G. Peterson, M.A. in memory of his father, Sir William Peterson, Principal of McGill, 1895-1918, awarded to the undergraduate, or graduate student with distinction in English Literature who has also shown creative literary ability.

NORMAN A. PRENTICE MEMORIAL PRIZE. — Value $300, established by Mrs. Norman A. Prentice in memory of her late husband, Norman A. Prentice, Arts '10. Awarded to a student of high standing proceeding from the intermediate to final year in the General or Major B.A. program. Preference is given to students who have included French and/or History among their subjects.

JAMES D. ROSS PRIZE. — An annual prize of $25, established by the former colleagues and friends of the late Professor James D. Ross. To be awarded by the Department of Philosophy to the outstanding student in the penultimate year of the Honours Philosophy Program.

LIONEL SHAPIRO AWARD IN ENGLISH. — $1,000 is awarded by the Scholarships Committee of the Faculty of Arts on the recommendation of the Department of English to one or more students in the B.A. course who are completing their final year and have demonstrated outstanding literary talent. The total awarded will not exceed $1,000.

PRIZE OF THE AMBASSADOR OF SWITZERLAND IN CANADA FOR FRENCH. — A book prize for excellence in the final year in French Language and Literature.

PRIZE OF THE AMBASSADOR OF SWITZERLAND IN CANADA FOR GERMAN. — A book prize for excellence in German in the final year, awarded by the Faculty of Arts on the recommendation of the Department of German to an undergraduate whose mother tongue is not German.

PRIZE OF THE AMBASSADOR OF SWITZERLAND IN CANADA FOR ITALIAN. — A book prize for excellence in the final year in Italian.

CORINNE FAY TABAC MEMORIAL PRIZE IN ENGLISH LITERATURE. — An annual prize of $50 donated by Mr. Steven T. Tabac in memory of his wife Corinne Fay Tabac, a former student at Macdonald College. Awarded to the winner of the Shakespeare Gold Medal.

WOMEN'S PERSONNEL GROUP OF MONTREAL PRIZE. — A prize of $50 made available in alternate years to McGill and to the University of Montreal. At McGill the selection is made by the Director of the Industrial Relations Centre in consultation with the appropriate departments in the Social Sciences and awarded to the woman student in any year of the Faculty of Arts or the Faculty of Management who shows the most promise and intends to continue, either at the University or in industry, in the general field of Personnel and/or human relations. The award will be available at McGill in 1968 and thereafter biennially.

WOODHEAD MEMORIAL PRIZE IN GREEK AND LATIN. — $100, presented by the Wiegand Memorial Foundation Inc., in honour of the late William Dudley Woodhead, Hiram Mills Professor of Classics and Chairman of the Department from 1925-1950, awarded to the student in Honours Greek and Latin of the intermediate or final years, who, in the opinion of the Department, has done the best work in this field.

PRIZE OF THE AMBASSADOR OF YUGOSLAVIA IN CANADA. — A book prize for the best student in the language, literature or civilization of one of the peoples of Yugoslavia (principally Serbo-Croatian). Open to undergraduate or graduate students and awarded on the recommendation of the Department of Russian and Slavic Studies.

Medals

The following medals are awarded to the graduating students who stand highest in the First Class Honours List of the subjects named, provided the Faculty so recommends to Senate:

HENRY CHAPMAN GOLD MEDAL, for Classical Languages and Literature.

FRENCH GOVERNMENT'S BRONZE MEDAL, for excellence in French in the general or Honours course.

In addition to the above, certain medals are offered annually by L'Alliance Française, at the discretion of the Department of French.

If there is no candidate for any medal, or if none of the candidates fulfils the required conditions, the medal is withheld, and the proceeds of its endowment for the year may be devoted to prizes in the subject for which it was intended.

GOVERNOR-GENERAL'S GOLD MEDAL, for Modern Language and Literature.

GOVERNOR-GENERAL'S SILVER MEDAL, awarded to the student standing highest among those graduating "with great distinction" in a major or faculty program of the Faculty of Arts or of Science. Awarded by a joint committee of the scholarships committees of the Faculties of Arts and of Science upon the recommendations of the faculties concerned.

ALLEN OLIVER GOLD MEDAL, for Economics and Political Science (founded by Mrs. Frank Oliver, in memory of her son, the late Allen Oliver, M.C., B.A., Lieutenant, 26th Battery, C.F.A., who was killed in action at the Somme, on November 18, 1916).

PRINCE OF WALES GOLD MEDAL, for Mental and Moral Philosophy.

SHAKESPEARE GOLD MEDAL, for English Language and Literature.

Loan Funds

McGILL SOCIETY OF ONTARIO LOAN FUND. — Established in 1938 by the Ontario Branch of the Graduates' Society of McGill.*

OTHER LOAN FUNDS. — See Section 3.1.

3.3 OPEN TO STUDENTS IN THE FACULTY OF DENTISTRY

For scholarships and bursaries open to undergraduates in all Faculties, see Section 3.1.

University Scholarships. — See Section 3.1.

* Apply to Student Aid Office

For details of scholarships, bursaries, and prizes in Dentistry see *Faculty of Dentistry Announcement.*

3.4 OPEN TO STUDENTS IN THE FACULTY OF EDUCATION

For scholarships and bursaries open to undergraduates in all Faculties, see Section 3.1.

Scholarships

For Entrance Scholarships, see Section 2.

EDMUND HENRY BOTTERELL AWARDS. — See Section 4.

RONALD BRIGDEN MEMORIAL SCHOLARSHIP. — Awarded annually to graduates from schools on the South Shore whose staff members are represented by the St. Lawrence Richelieu Teachers' Association. Candidates must be in the Faculty of Education. Value $200. Apply to President, Ronald Brigden Memorial Scholarships S.R.T.A., Box 175, St. Lambert, P.Q.

ELLA BRYSON SCHOLARSHIP. — Offered to a student entering the Faculty of Education from Fort Coulonge Protestant School. Apply to Secretary, Women's Institute, Fort Coulonge, P.Q., before May 1.

SARAH EMMA HILL SCHOLARSHIP. — Endowed by the late Mrs. Sarah Emma Hill, of Stanstead, Que., and awarded each year to a student in the Faculty of Education "where assistance is required." Scholarship and indication of professional ability will be considered. Applications must be submitted by August 15.*

ESTELLA HOLMES SCHOLARSHIP. — $100 offered by the Women's Institute of Stanstead County to a student from Stanstead County who is entering the Faculty of Education. Apply, not later than July 1, to the Convenor of Education of the Stanstead County Women's Institute whose name may be obtained from the Principal of the applicant's school.

A.S. LAMB SCHOLARSHIPS. — Three scholarships of $300 each, endowed by friends of Dr. Arthur S. Lamb, formerly Director of the School of Physical Education and of the University Department of Athletics, Physical Education and Recreation, as a tribute to his work in these fields. Awarded to students entering the intermediate or final year of the Bachelor of Education (Major in Physical Education) course. One scholarship is awarded on academic record and personal qualities. Financial need is also considered in awarding the other two scholarships. No application necessary.

MACDONALD TEACHERS' ALUMNI ASSOCIATION SCHOLARSHIP. — Value $100, awarded to the best all round student by the Dean of the Faculty of Education and the President of the Alumni Association. The Scholarship must be used to further the winner's educational studies. When circumstances permit, two scholarships are offered in the same year.

UNIVERSITY SCHOLARSHIPS. — See Section 3.

Bursaries

PHYLLIS A. AITKEN BURSARY. — Value $700, awarded annually for a five-year period to a student or students in the Bachelor of Education program entering the intermediate or final year. Preference will be given to applicants who are planning to teach in one of the sciences or a language other than their natural language. Awarded by the I.O.D.E. on the recommendation of the Faculty of Education on the basis of financial need. May be renewable.

ELIZABETH MILLAR COSENS BURSARY. — To be awarded annually to a woman in the intermediate or final year of the degree course in Physical Education. The award will be made on the recommendation of the Faculty of Education without restriction as to race, creed, colour or nationality on the basis of academic record, motivation and financial need with primary concern being given to academic proficiency.

DELTA KAPPA GAMMA SOCIETY ALPHA CHAPTER GRANT-IN-AID. — A $250 grant-in-aid to a woman candidate for the 1st class diploma who has evidenced academic ability and who shows promise of making a contribution to the teaching profession. Applications must be submitted by August 15.*

I.O.D.E. BURSARIES. — The Municipal Chapter I.O.D.E. offers two bursaries of $350 and $200, tenable in the Faculty of Education. Awarded by a committee of the Chapter on Scholarship and need. Apply to the Educational Secretary, the Municipal Chapter of Montreal, I.O.D.E., 5475 Côte St. Antoine, Montreal, P.Q.

KAY KERRY CHAPTER I.O.D.E. BURSARY. — A bursary of $300 offered to a student resident in Pointe Claire or Beaconsfield, with preference given to students in the Faculty of Education. Apply to Chairman, Bursary Committee, Kay Kerry Chapter, I.O.D.E., 233 Allancroft Crescent, Beaconsfield, Que., not later than March 1.

KIWANIS CLUB OF LAKE OF TWO MOUNTAINS BURSARY. — $150, tenable by a student in the Faculty of Education residing in the counties of Vaudreuil-Soulanges including Ste. Anne de Bellevue and Senneville. Apply to the Secretary, Kiwanis Club of Lake of Two Mountains, P.O. Box 96, Dorion, Quebec, before September 30.

MONTREAL WOMEN'S CLUB ELIZA REID MEMORIAL BURSARY. — Founded in 1927 by the Montreal Women's Club in memory of its first President,

* Apply to Student Aid Office

Mrs. Robert Reid, to provide a Bursary for a student needing financial assistance to continue his studies. Preference will be given to students in the Faculty of Education.*

PROVINCIAL ASSOCIATION OF PROTESTANT TEACHERS BURSARIES. — A number of bursaries offered on the basis of scholarship and need. Apply to the Executive Director, Provincial Association of Protestant Teachers, 245 Hymus Blvd., Pointe Claire, P.Q.

JANET MORISON ROBB BURSARY FOR WOMEN. — The income for one year from endowment of $2,000, established by the late Hon. James A. Robb, formerly M.P. for Chateauguay-Huntingdon and Minister of Finance, Canada, in memory of his daughter, Janet Morison Robb, wife of Hugh Harvie Donald. Preference is given to women students resident in either of the counties of Chateauguay-Huntingdon, or Beauharnois, who are daughters of widows or widowers of limited or moderate means, or daughters of disabled Canadian soldiers who have seen active service. Open to students in the Faculty of Agriculture, the school of Food Science, or the Faculty of Education and awarded by the Faculty of Agriculture Scholarships Committee. Students in the Faculty of Education should apply to the Student Aid Office before August 15.

VERDUN WOMEN'S CLUB HARRIET MORRIS MEMORIAL BURSARY. — Value $100, tenable for one year. Awarded in memory of the co-founder of the Club, Harriet Morris, on the basis of academic record, character, and financial need, to a woman student entering the Faculty of Education who is a graduate of Verdun Protestant High School.

Medals

GOLD MEDAL. — Awarded to the student demonstrating the highest general proficiency throughout the B.Ed., Major in Physical Education program.

GOVERNOR-GENERAL'S MEDAL. — Presented by His Excellency the Governor-General of Canada. Awarded for general proficiency to a full-time teacher in training in the graduating year of the Bachelor of Education program.

STRATHCONA TRUST MEDALS. — Awarded to the man and the woman standing highest in the initial year and to the man and the woman standing highest in the intermediate year of the Major Physical Education program.

Loan Funds

NATIONAL COUNCIL OF JEWISH WOMEN LOAN FUND. — Established for the purpose of aiding students in the Faculty of Education to complete their courses.*

PROVINCIAL ASSOCIATION OF PROTESTANT TEACHERS LOAN FUND. — Loans of not more than $300 per annum with priority to students applying for the first time and to those not eligible for other bursaries. Loans repayable when the student begins teaching. Apply to the P.A.P.T., Professional Loans Committee, 245 Hymus Blvd., Pointe Claire, P.Q.

ST. GEORGE'S LOAN FUND. — Established in 1955 by a donation of $500 to assist students registered in the Faculty of Education.*

STUDENT TEACHERS' SOCIETY LOAN FUND. — Established in 1954 by a donation from the Student Teachers' Society to assist students registered in the Faculty of Education. Additional donations supporting this fund have been received from the following sources: I.O.D.E. Ethel Walkem Joseph Fund, Gardner Kneeland Fund, Milton Hersey Fund, Dr. S.P. Robins Fund, and J.C. Wilson Fund.*

OTHER LOAN FUNDS. — See Section 3.1.

3.5 OPEN TO STUDENTS IN FACULTY OF ENGINEERING (Including Architecture)

For Entrance Scholarships, see Section 2.
For scholarships and bursaries open to undergraduates in all Faculties, see Section 3.1.

General Regulations in Engineering

1. Normally only those students who have completed at least 30 credits in the academic year preceding the award will be eligible for scholarships.
2. Scholarships will be awarded only if an adequate scholarship standard is attained.

Scholarships

AMERICAN SOCIETY FOR METALS SCHOLARSHIP. — $600 offered by the Montreal Chapter of the American Society for Metals to a student in any year of the Metallurgical Engineering course. Awarded by the Scholarships Committee of the Faculty of Engineering on the recommendation of the Department of Metallurgical Engineering on the basis of academic standing, engineering promise, and financial need.

BAYLIS SCHOLARSHIP. — Value $290, founded in memory of Mr. and Mrs. James Baylis of Montreal. Awarded to a student entering the Second year who is in need of financial assistance and will be renewed if the student maintains satisfactory standing. Apply through the Dean of the Faculty.

EDMUND HENRY BOTTERELL AWARDS. — See Section 4.

E.G.M. CAPE AND COMPANY (1956) LTD. AWARD — $250, for a student who has completed the First year of the Civil Engineering course and is

* Apply to Student Aid Office

entering the Second year. Awarded by the Scholarships Committee of the Faculty of Engineering on the basis of high scholastic standing, activity in extracurricular work and student engineering society affairs, and construction engineering promise. All other factors being equal financial need will be considered.

COMINCO SCHOLARSHIPS. — To assist in ensuring a continuing supply of qualified graduates in fields vital to industry in Canada, Cominco Ltd. has established a program of twenty-four scholarships at specified universities in Canada to assist students in financing the final two years of their undergraduate course. Two of these scholarships are awarded annually in the form of two-year awards of $800 each per year at McGill University by the University Scholarships Committee upon the recommendations of the Departments concerned. Open to students who in the fall will enter the penultimate undergraduate year of a course leading to a degree in Honours Geology, Chemical Engineering, Geological Engineering, Mining, Mineral Engineering, Mechanical Engineering, Metallurgy, Metallurgical Engineering, Soil Science, or Agronomy. Renewals for the second year will be subject to attainment of academic standards satisfactory to the University Scholarships Committee.

CYANAMID OF CANADA LIMITED SCHOLARSHIP. — Value $600, established by Cyanamid of Canada Limited for a student whose scholastic standing and attendant attributes make him worthy of financial assistance. Candidates must be Canadian citizens or landed immigrants. Awarded by the Scholarships Committee of the Faculty of Engineering, with preference being given to students in Chemical Engineering.

MARION McCALL DALY AWARD. See Section 4.

SIR WILLIAM DAWSON SCHOLARSHIPS IN METALLURGY. — A research and teaching graduate award of $3,000, or one or more undergraduate awards totalling $3,000, in the Department of Mining and Metallurgical Engineering, endowed in memory of the late Sir William Dawson, Principal of McGill University from 1855 to 1893.

DOW CHEMICAL OF CANADA SCHOLARSHIP. — $500 for a student in the final year of Chemical Engineering, awarded by the Scholarships Committee of the Faculty of Engineering on the recommendation of the Chairman of the Department of Chemical Engineering, subject to the following conditions: the student (1) must have a sincere interest in the Chemical Industry; (2) must be in the upper half of the class; (3) must demonstrate some leadership in extracurricular activities; (4) must be "personable"; (5) must not hold another scholarship.

GEORGE HERRICK DUGGAN MEMORIAL SCHOLARSHIPS. — See Section 2.

NEVIL NORTON EVANS SCHOLARSHIP. — Value $200, established in 1937 by graduates of the Faculty of Applied Science (Engineering) to commemorate the work of Professor Nevil Norton Evans, formerly Professor of Chemistry. Open to students in Engineering who show outstanding ability in Chemistry. Awarded by the Faculty of Engineering and the Department of Chemistry.

GENERAL MOTORS SCHOLARSHIPS. — Established by General Motors Corporation of Canada and open to outstanding young Canadian men or women. One scholarship is awarded annually in the form of a two-year award of $1,000 per year by the University Scholarships Committee upon the recommendations of the departments concerned. Open to students who in the fall will enter the penultimate undergraduate year of a program of studies leading to a degree in Engineering, Commerce or Economics. Should a holder withdraw or fail to maintain a satisfactory standing the scholarship may be awarded to another qualified candidate of the same class.

R.P.D. GRAHAM SCHOLARSHIPS AND MEDAL. — Endowed by former students of Dr. R.P.D. Graham, Professor Emeritus of Mineralogy, and available to students entering an intermediate year or the Final year of the B.Sc. course and to students entering the Second or Third year of the Mining Engineering course. Awarded by the University Scholarships Committee upon recommendations of the chairmen of the Departments of Geological Sciences and Mining and Metallurgical Engineering and Applied Geophysics. A bronze medal bearing a a likeness of Professor Graham is given to the most highly qualified student receiving one of these awards.

THOMAS LEEMING HARRISON AWARD. — $250, for a student who has completed the Second year of the Civil Engineering course with high scholastic standing and who is entering the final year. Awarded by the Scholarships Committee of the Faculty of Engineering on the recommendation of the Chairman of the Department of Civil Engineering and Applied Mechanics.

WILLIAM HENRY HOWARD SCHOLARSHIPS. — Three scholarships of $1,000 each bequeathed in 1955 by the late Mrs. Florence P. Howard in memory of her husband. Open to undergraduate and graduate students in Metallurgy, Chemical Engineering and Geology. Awarded and renewable by the University Scholarships Committee upon the recommendations of the Departments concerned for scholastic ability and general promise.

INCO PARTICIPATING SCHOLARSHIPS. — The International Nickel Company of Canada, Limited, provides annually fifty awards at Canadian universities to students who in the fall will enter the penultimate undergraduate year of a course leading to a degree in Chemistry, Geology (including Geophysics and Geochemistry), and

Chemical, Civil, Electrical, Mechanical, Metallurgical and Mining Engineering. Each award covers tuition fees plus a grant of $300 for miscellaneous expenses and a grant-in-aid of $500 to the department. Recipients may also request to undertake a summer orientation program with the Company in operations allied to their field of study. Renewed for one additional year provided the student satisfies the requirements for the award. Students must be recommended by the department, and no more than two applications will be considered from each department of any university. Further information may be obtained from the Scholarships Office. Applications must be submitted by January 15.

IRON ORE COMPANY OF CANADA SCHOLARSHIPS. — Two scholarships of $500 each, open to students entering the Second or Third year in Mining, Metallurgical, Electrical, Mechanical, Civil, Chemical or Geological Engineering. Awarded by the Scholarships Committee of the Faculty of Engineering on the basis of academic ability, personality, need, and general promise.

JOHNSON WAX SCHOLARSHIP. — Total value of $2,400 ($800 a year for three years), awarded each year to a student who is entering the First year course in Chemical Engineering. Awarded by the Faculty of Engineering and renewable until the holder graduates provided his or her academic standing is sufficiently high. Awarded mainly on the basis of academic standing but general qualifications for the engineering profession and need for financial help are also considered. No applications necessary.

HARRY KRASHINSKY SCHOLARSHIP. — Value $1,000, established by the Corporation of Engineers of Quebec for Quebec students finishing their penultimate year in Engineering. Applicants must submit a curriculum vitae, which should emphasize past and present activities in university and community affairs, and an essay not exceeding 500 words on the theme "The Role of the Engineer in the Community". Applications must be submitted by February 1. For further information apply to Scholarships Office.

FREDERIC J. LEMAISTRE AWARD. — Value $200, awarded annually to a worthy student in the penultimate year of the undergraduate program in Chemical Engineering. Awarded by the Faculty Scholarships Committee on the recommendation of the Department of Chemical Engineering.

H.M. MACKAY MEMORIAL SCHOLARSHIP. — Value $300, established in 1932 as a memorial to the late Henry M. Mackay, formerly Dean of the Faculty of Engineering. Awarded by the Faculty Scholarships Committee to a Canadian citizen or landed immigrant in the First year in Engineering on the results of the first semester examinations.

J.W. McCONNELL SCHOLARSHIPS IN SCIENCE AND ENGINEERING. — Made possible through the generous donation of the late Mr. J.W. McConnell, awarded to students proceeding to degrees in any field of Science or Engineering (including Architecture) and renewable each year provided academic standing satisfactory to the University Scholarships Committee is maintained. Candidates must be Canadian citizens or landed immigrants, and on proof of need, may receive up to full tuition fees plus the cost of board, residence and books.

Students in Engineering are eligible for these scholarships provided they have received a University Scholarship. They should apply by filling out an Application for Financial Aid, which may be obtained from the Student Aid Office.

MR. AND MRS. T. R. McLAGAN SCHOLARSHIPS. — Two awards covering tuition fees for outstanding students entering the final year of Electrical Engineering and Mechanical Engineering (one in each department) who are judged to be the best in terms of academic performance, leadership and citizenship. In cases where two or more students are judged equal on this basis, the financial needs of the candidates shall be considered and preference given to the student whose need is greatest.

MINING AND METALLURGICAL ENGINEERING ENTRANCE SCHOLARSHIPS. — See Section 2.

MONTREAL WOMEN'S AUXILIARY OF THE CANADIAN INSTITUTE OF MINING AND METALLURGY SCHOLARSHIP. — Value $600, open to undergraduate or graduate students in Geology, Metallurgical Engineering, Mining Engineering, or allied subjects.

R. G. K. MORRISON AWARD. — Value $450, established in honour of Prof. R.G.K. Morrison, Chairman of the Department of Mining Engineering and Applied Geophysics 1949-1966. Kerr Addison Mines Limited is responsible for supporting this award. Awarded by the Scholarships Committee of the Faculty of Engineering upon the recommendation of the Chairman of the Department of Mining and Metallurgical Engineering to a student in the Mining Engineering or Applied Geophysics course. If there is no suitable candidate for a particular year at the undergraduate level, the award may become available to a graduate student in Mining Engineering.

QUEBEC IRON AND TITANIUM CORPORATION SCHOLARSHIPS. — Two scholarships of $500 each open to students who have completed their First and Second years in Metallurgical Engineering at McGill University. Further information may be obtained from the Chairman of the Department of Mining and Metallurgical Engineering and Applied Geophysics.

GORDON SPROULE MEMORIAL SCHOLARSHIP. — $600, offered by the Montreal Chapter of the American Society for Metals to a student in the penultimate year of the Metallurgical Engineering course. Established in memory of Gordon Sproule, a member of the staff of the Department of Metallurgical Engineering from 1918 to 1953, in appreciation of his ability and his many services to the Society. Awarded by the Scholarships Committee of the Faculty of Engineering on the recommendation of the Department of Mining and Metallurgical Engineering and Applied Geophysics on the basis of academic standing, engineering promise, and financial need.

UNIVERSITY SCHOLARSHIPS. — See Section 3.

WELDON AWARD. — Value $500, established by a bequest from the late Richard Laurence Weldon. Awarded by the Faculty Scholarships Committee on the recommendation of the Department of Mechanical Engineering.

F. T. M. WHITE AWARD. — Value $450, established in memory of the late Prof. F.T.M. White, Chairman of the Department of Mining Engineering and Applied Geophysics 1966-1971. The Canadian Mineral Industry Education Foundation is responsible for supporting this award. Awarded by the Scholarships Committee of the Faculty of Engineering upon the recommendation of the Department of Mining and Metallurgical Engineering and Applied Geophysics to a student in the Second or Third year of the Mining Engineering or Applied Geophysics course.

STUART ALBERT WISDOM MEMORIAL SCHOLARSHIP. — Value $400, established in 1953 by Mrs. Stuart Albert Wisdom as a memorial to her late husband (B.Sc. (Mining and Metallurgy), McGill '09), and to commemorate his outstanding contributions to the field of metallurgy and, in particular, his invention of the process for the manufacture of acetylene black. Awarded by the Faculty Scholarships Committee on the recommendation of the Department of Mining and Metallurgical Engineering and Applied Geophysics to a student entering the Third year of Metallurgical Engineering who has shown high scholastic ability and engineering promise.

ROY M. WOLVIN MEMORIAL SCHOLARSHIPS AND BURSARIES. — Two scholarships of $375 each, and a number of bursaries are given by Mrs. Roy M. Wolvin in memory of her husband. One scholarship is restricted to men undergraduates in the Faculty of Engineering, which is awarded by the Faculty Scholarships Committee. The other scholarship is restricted to women undergraduates in the Faculty of Arts, the Faculty of Science or the Faculty of Management, and is awarded by the University Scholarships Committee upon recommendations of the faculties concerned. The bursaries are open to students in any undergraduate faculty who have a good academic record and need financial assistance. Apply for bursaries to the Student Aid Office.

Bursaries

BECHTEL FOUNDATION OF CANADA BURSARIES. — Bursaries of not less than $300 each for students in the Faculty of Engineering. The $1,200 annual gift may be divided between two or four students, two of whom must be entering the First year.*

ROBERT BRUCE BURSARIES. — Several bursaries of $100 each are open each year to "young men and women of promising abilities but of straitened circumstances in Arts, Science, or Engineering."*

BYERS CONSTRUCTION CO. BURSARY. — $300, awarded to a student in Engineering with a good academic record who needs financial assistance. Renewable annually until the holder graduates if he maintains a satisfactory academic standard and still needs financial help. Apply to the office of the Dean.

CANADIAN TITANIUM PIGMENTS LIMITED BURSARIES. — Open to Canadian students in any year of the Faculty of Engineering or the Faculty of Science and awarded on the basis of academic merit and financial need.*

TOM DESMARAIS WHITE PRINT COMPANY BURSARY. — $500, awarded annually to a needy student in the School of Architecture.*

DOMTAR BURSARY. — $100, established by Domtar Construction Materials Limited, and awarded to a needy student in the School of Architecture.*

DOUGLAS TUTORIAL BURSARIES. — The late Dr. James Douglas, who was a member of the Board of Governors, provided for ten or more tutorial bursaries of approximately $100 per annum in the Faculty of Engineering. These bursaries carry the obligation of giving tutorial instruction equivalent to one evening a week and the circumstances of the applicants as well as their academic standing are considered. Students in the Second and Third years of Engineering are eligible. Apply in writing to the Dean's Office on or before October 15.

HON. ROBERT JONES BURSARY. — One or more bursaries not exceeding $250 each in any one year are granted to needy students in the Faculties of Arts, Science or Engineering.*

RICHARD S. LEA TUTORIAL BURSARIES. — The late Mrs. Wanda Lea, widow of the late Richard S. Lea, Consulting Engineer and graduate in Applied Science of McGill University, provided a fund of $5,000, the revenue of which provides two bursaries of $100 per annum given to suitable students in

* Apply to Student Aid Office

their last two years of Engineering, with the obligation of giving tutorial instruction equivalent to one evening a week. Apply in writing to the Dean's Office on or before October 15.

CHARLES MICHAEL MORSSEN BURSARY FUND. — Established by Mrs. C. Michael Morssen in memory of her husband, Charles Michael Morssen. The revenue from the fund to be used in assisting worthy students in any year of the Faculty of Engineering. Awarded by the Scholarships Committee of the Faculty of Engineering on the basis of academic record and financial need of the recipients.

ORDER OF ENGINEERS OF QUEBEC BURSARY. — $500, tenable by a student in the Second or Third year of the Faculty of Engineering, and awarded by the Faculty.

SEPARATOR ENGINEERING LIMITED BURSARY. — A bursary of $200, open to undergraduate students enrolled in Chemical, Mechanical or Metallurgical Engineering. Awarded by the Scholarships Committee of the Faculty of Engineering on the basis of financial need and academic standing.

STANDARD CHEMICAL BURSARY. — An annual bursary of $250 awarded to a Canadian student, without restriction as to national background, language, colour or religion, preferably in an upper year of Chemical Engineering, who requires financial assistance. The award will be made by the Student Aid Office.*

EDWARD VOLCKMAR BURSARY FUND. — Established in 1972 by Miss Grace H. Prescott in memory of Edward Volckmar. Awarded annually to a student in need in the Faculty of Engineering. The bursary may be renewed until graduation.*

GORDON WEBBER BURSARIES. — Established by a bequest of the late Professor Gordon Webber, together with a number of donations from his former students, for needy students in the School of Architecture.*

For bursaries open to undergraduates in all Faculties, see Section 3.

Prizes

BRITISH ASSOCIATION PRIZES. — Two prizes of $40 and $20, awarded to the students obtaining the highest, and the second highest aggregate marks in the First year courses in Calculus and Mechanics.

CANADIAN CONSTRUCTION ASSOCIATION PRIZE. — Each year the Chairman of Civil Engineering selects the best technical paper dealing with some phase of construction work for submission to the national Robert Leggett Award competition. The competition is open to all senior undergraduate students of civil, mechanical or electrical engineering. The University's submission automatically receives a $50 prize and an engineer's handbook. The national competition prizes are $250, $150 and $75 plus handbooks.

CANADIAN INSTITUTE OF MINING AND METALLURGY PRIZES. — Two prizes, $200 and $100, for the best and second best technical paper prepared by undergraduates before receiving a Bachelor's degree on a subject appropriate to any one of the Institute's Technical Divisions, namely Coal, Geology, Industrial Minerals, Metallurgy, Metal Mining, and Petroleum and Natural Gas. Papers should be submitted to the Canadian Institute of Mining & Metallurgy, 1117 St. Catherine St. W., Montreal, Quebec, before January 15.

VICTOR E. DAWSON MEMORIAL PRIZE. — $85 to the best student entering the final year in the program of Mining Engineering and Applied Geophysics.

ENGINEERING INSTITUTE OF CANADA LIFE MEMBERS' PRIZE. — The prize consists of a bronze medal known as "The Engineering Institute of Canada Life Members' Organization Medal", a framed certificate and a two-year membership in the Institute, one year as a student member and the other as an associate member. The prize is awarded annually to a student member of the Institute on the basis of marks achieved at the completion of his penultimate year of undergraduate study and on his activities in the E.I.C. student section or in the local branch of a recognized engineering society.

ENGINEERING INSTITUTE OF CANADA, (ASSOCIATE SECTION, MONTREAL BRANCH) PRIZES. — Two prizes, $50 and $25, for the best and second best papers in any branch of engineering presented at the Annual Students' Night sponsored by the Student Guidance Committee. Details may be obtained from the Faculty representative of the Engineering Institute of Canada.

H. L. FETHERSTONHAUGH BOOK PRIZE. — Established in memory of the late H.L. Fetherstonhaugh, M.C., F.R.A.I.C., F.R.I.B.A., R.C.A., a former member of staff in the School of Architecture. Awarded annually by the School of Architecture to the student with the highest standing in the course Professional Practice.

ROBERT FORSYTH PRIZE IN CIVIL ENGINEERING. — $100, bequeathed by the late Miss Jeanie Forsyth, and awarded, if the examiners so recommend, to a "worthy and needy" student of the graduating class who secures high standing in the subjects of Theory of Structures and Structural Design.

JOHN GREEN MEMORIAL PRIZE IN ELECTRICAL ENGINEERING. — Established by his relatives and friends in memory of John Green, an Honours student in the Electrical Engineering program

* Apply to Student Aid Office

who died as a result of an accident. To be awarded annually to the student with highest standing in the penultimate year of Honours Electrical Engineering. The award is to be made by the Faculty of Engineering Scholarships Committee on the recommendation of the department.

JAMES DICKIE HALL PRIZES. — Two prizes of $250 each, one in Mining and one in Metallurgy, established by Oliver Hall in memory of his son, James Dickie Hall, lost near Cannes in June 1944 in an air battle between four R.C.A.F. and more than ninety enemy planes. Open to students entering the Second or Third year of the above courses and awarded for the best technical paper in each discipline. Not awarded unless the papers are of high quality.

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS PRIZE. — Two prizes of $25 and $15, offered to students of McGill by the Montreal Section of the Institute of Electrical and Electronics Engineers to outstanding students in the Second or Third year in Electrical Engineering upon recommendation by the Department.

MURDOCH LAING PRIZE. — $265, for the design of a medium cost city house, established by the late Mrs. Florence B. Laing in memory of her son (formerly a student in the School of Architecture) who was killed at Courcelette in 1916 while serving with the 24th Canadian Infantry Batallion. Awarded in a competition held during the summer prior to entering the B.Arch. program.

DR. W.B. LEWIS PRIZE. — See Section 3.

CHESTER MACNAGHTEN PRIZES. — See Section 3.

McCHARLES PRIZE. — $1,000, gift of the late Aeneas McCharles, for the discovery of improved methods of treating Canadian ores or minerals, for the development of new life-saving devices in the power and light industry, or for notable achievement in scientific research in any useful practical line. Open to any Canadian. For further information apply to the Scholarships Office.

ORDER OF QUEBEC LAND SURVEYORS PRIZE. — $25, open to students in Civil Engineering and awarded at the end of the Second year by the Corporation to the student obtaining the highest standing in the subjects of the undergraduate course in engineering comprising Surveying, up to the end of the Second year.

JOHN BONSALL PORTER PRIZE. — $40, awarded annually by the Department of Mining and Metallurgical Engineering and Applied Geophysics for outstanding performance.

LOUIS ROBERTSON PRIZE. — Founded by Mr. and Mrs. John A. Robertson, in memory of their son, John Louis Armour Robertson, who was killed in World War I on July 18, 1916. A book prize for the student obtaining the highest standing in History of Architectural Theory II in the School of Architecture.

SCOTT EXHIBITION. — A prize of $75, founded by the Caledonian Society of Montreal, to commemorate the centenary of Sir Walter Scott, and a British Association prize of $50, awarded to the students with highest and second highest standing in Mathematics, Mechanics, Descriptive Geometry, and Physics.

SOCIETY OF CHEMICAL INDUSTRY MERIT AWARDS. — Three Merit Awards consisting of a gold key and a year's subscription to "Chemistry and Industry" awarded to the three graduating students who achieve the best results in: (a) the B.Sc. course with Honours in Chemistry, or Joint Honours in Chemistry and some related science; (b) the B.Eng. course in Chemical Engineering; (c) the Honours course in Biochemistry. Awarded by the Scholarships Committees of the Faculty of Science and the Faculty of Engineering on the recommendations of the Chairmen of the Departments concerned.

PHILIP J. TURNER PRIZE. — $175, presented by A.B. Darbyson, B.Arch. '15, to the student in the School of Architecture obtaining the highest standing in Design and Construction II.

Medals

BIRKS GOLD MEDAL. — Awarded by Henry Birks & Sons (Montreal) for the best graduating student in Metallurgical Engineering.

ERNEST BROWN GOLD MEDAL. — Founded by the late Mrs. Ernest Brown in 1952 in memory of her husband the late Ernest Brown, M.Sc., M.Eng., D.Eng., Dean of the Faculty of Engineering from 1930 to 1942. Awarded to the student in the graduating class in any of the Departments of Engineering showing the highest ability throughout his undergraduate course. While academic standing is of primary importance, account is also taken of qualities of leadership and ability to work with others.

BRITISH ASSOCIATION MEDAL. — Founded by the British Association for the Advancement of Science in commemoration of its meeting held in Montreal in 1884. Open for competition to students of the graduating class in each of the Engineering courses, and, if the examiners so recommended, is awarded to the student taking the highest position in the final examinations.

CHARLES MICHAEL MORSSEN GOLD MEDAL. — Established by Mrs. C. Michael Morssen in memory of her husband, Charles Michael Morssen, a benefactor of the Faculty of Engineering for many years. Awarded to a student of high academic standing and exceptional engineering promise in the graduating class in any of the Departments of Engineering.

ROYAL ARCHITECTURAL INSTITUTE OF CANADA MEDAL. — Offered to the student who has achieved the highest standing in the B.Arch. program, and who gives promise of being an architect of distinction after graduation. Selection is made by a committee of staff of the School of Architecture.

Loan Funds

BENNETT EDUCATIONAL FUND. — The Engineering Institute of Canada makes loans from the fund to Engineering students (normally in upper years).*

CANADIAN INSTITUTE OF MINING AND METALLURGY MONTREAL BRANCH LOAN FUND. — Established in 1958 by the Montreal Branch of the Institute to provide loans to undergraduate or graduate students in Geological Sciences, Metallurgical Engineering and Mining Engineering.*

J.M. FAIRBAIRN LOAN FUND. — Bequeathed in 1967 by the late Mrs. J.M. Fairbairn for loans for students in the Faculty of Engineering.*

GEORGE HENRY FROST FUND. — Founded by the late G.H. Frost, B.Sc. '60, to aid students in the Faculty of Engineering who require financial assistance. When making loans the applicants' academic standing is considered.*

BERNARD LEVITON LOAN FUND. — Established by Mr. Sidney Ender in memory of the late Bernard Leviton for students in the Faculty of Engineering with preference given to students in Electrical Engineering.*

ISABELLA McLENNAN BURSARY AND LOAN FUND. — A rotating fund for students in Architecture to assist in financial emergencies.*

MONTREAL WOMEN'S AUXILIARY OF THE CANADIAN INSTITUTE OF MINING AND METALLURGY LOAN FUND. — Founded for the assistance of Engineering students in Mining, Metallurgy, Geology, and allied subjects.*

SCIENCE '25 MEMORIAL LOAN FUND. — Established in 1955 by the Class of Science '25 for Engineering undergraduates.*

WADDELL LOAN FUND. — Founded by the late J. B. Waddell. Loans are made under the same conditions as apply to the George Henry Frost Fund, but are available also to graduate students.*

WICKENDEN LOAN FUND. — Established in 1958 by Mr. John Wickenden to aid students in Engineering with better than average standing in previous year.*

OTHER LOAN FUNDS. — See Section 3.1.

3.6 OPEN TO STUDENTS IN THE FACULTY OF LAW

For scholarships and bursaries open to undergraduates in all Faculties, see Section 3.1.

For details of scholarships bursaries, and prizes in Law, see Faculty of Law Announcement.

3.7 OPEN TO STUDENTS IN MACDONALD COLLEGE In the Faculty of Agriculture (Including School of Food Science)

For Entrance Scholarships, see Section 2.

For Scholarships, bursaries and loans open to undergraduates in all Faculties, see Section 3.1.

For details of scholarships, bursaries, and prizes in Agriculture and Food Science, see the Macdonald College Announcement for the Faculty of Agriculture and School of Food Science.

3.8 OPEN TO STUDENTS IN THE FACULTY OF MANAGEMENT

For Entrance Scholarships, see Section 2.

For scholarships and bursaries, open to undergraduates in all Faculties, see Section 3.1.

Scholarships

EDMUND HENRY BOTTERELL AWARDS. — See Section 4.

ROBERT BRUCE SCHOLARSHIP. — $100, tenable for two years, bequeathed by the late Robert Bruce, of Quebec City. Open to students in the Faculty of Arts, the Faculty of Science or the Faculty of Management and awarded for high standing in the examinations at the end of the First year. Awarded by the University Scholarships Committee upon recommendations of the faculties concerned.

COMMERCE 1925 AWARD. — $300, awarded by the Scholarships Committee of the Faculty of Management on the recommendation of the Dean to the student obtaining the highest marks in Accountancy at the end of the Third year of the Commerce course.

MARION McCALL DALY AWARD. — See Section 4.

L.J. FORGET & COMPANY AWARD. — Value $400, established in 1973 by L.J. Forget & Company. Awarded annually by the Scholarships Committee of the Faculty of Management for excellence in the Finance courses in the Bachelor of Commerce Program.

GENERAL MOTORS SCHOLARSHIPS. — Established by General Motors Corporation of Canada and open to outstanding young Canadian men or

* Apply to Student Aid Office

women. One scholarship is awarded annually in the form of a two-year award of $1,000 per year by the University Scholarships Committee upon the recommendations of the departments concerned. Open to students who in the fall will enter the penultimate undergraduate year of a program of studies leading to a degree in Engineering, Commerce or Economics. Should a holder withdraw or fail to maintain a satisfactory standing the scholarship may be awarded to another qualified candidate of the same class.

SIR WILLIAM MACDONALD SCHOLARSHIPS. — Two scholarships of $500 each, open to all students in the Second and Third years.

PRICE WATERHOUSE $ CO. AWARD. — Value $250, awarded by the Scholarships Committee of the Faculty of Management to a student in the B.Com. program completing his Second year and proceeding to his final year and planning to continue his studies with a practising firm of chartered accountants. The winner must have high standing in the Second year examinations and outstanding academic record, ability, and other qualifications.

HYMAN HERBERT STEIN AWARD. — Approximately $250, in memory of the late Hyman Herbert Stein, B.Com. 1925, for an award for a student entering the Second year of the three-year Commerce Program. Awarded at the discretion of the Dean of the Faculty. Ability and financial need will be taken into consideration when making the award. award.

TOUCHE ROSS & CO. AWARD. — An award of $250 to a student who has completed the Second year, will be entering the final year in the B.Com. program, and who intends on graduation to qualify as a Chartered Accountant. Awarded on high standing in the Second year and on academic record, ability and personality and other characteristics considered to be suitable.

UNIVERSITY SCHOLARSHIPS. — See Section 3.1

ROY M. WOLVIN MEMORIAL SCHOLARSHIP. — See Section 3.2.

Bursaries

AFFILIATED FACTORS CORPORATION BURSARY. — Open to deserving students in any year of Commerce.*

BESSIE PARSONS BENTLEY STUDENT AID FUND. — Established in 1959 by Mr. William Bentley in memory of the late Mrs. Bessie Parsons Bentley, for scholarships or student aid for students in the B.Com. program. Awards are made by the Student Aid Office, with the approval of the Dean of the Faculty of Management, to students whose general standing entitles them to special consideration and assistance.*

FRUEHAUF TRAILER BURSARY FUND. — The Fruehauf Trailer Company has established a bursary fund for the purpose of aiding Business Administration students in the intermediate and final year of the Faculty of Management to complete their courses.*

SYDNEY S. PAPPELBAUM BURSARY. — Approximately $180, in memory of the late Captain Sydney S. Pappelbaum, B.Com., 1952, open to students in Commerce who have completed Second year and are entering Third year.*

CHARLES S.C. WISDOM BURSARY. — $175, established in 1956 by the late Mrs. Stuart Albert Wisdom in memory of her late son, Charles S.C. Wisdom, a graduate of the Royal Military College, Kingston, and of the McGill School of Commerce. Awarded by the Student Aid Office in consultation with the Dean of the Faculty of Management to a deserving student in any of the last two years of the B.Com. program.*

Prizes

CHARTERED ACCOUNTANTS STUDENTS' SOCIETY OF QUEBEC PRIZE IN ACCOUNTANCY & AUDITING. — Established in 1974 by the Chartered Accountants Students' Society of Quebec. A prize of $100 in cash is awarded to the student receiving the highest average grades in accountancy and auditing in his or her final year. Awarded by the Faculty of Management Scholarships Committee.

CHERRY PRIZES. — See Section 3.2.

CLARKSON, GORDON & CO. PRIZE. — $100, awarded at the end of the Final year to the student who obtains the highest standing in Accounting and Auditing.

DR. J. A. COOTE PRIZE IN ORGANIZATIONAL BEHAVIOUR AND PERSONNEL. — A prize of $100, awarded by the Faculty of Management to a final year student in the Management Concentration Group who is registered in the area of Organizational Behaviour and Personnel.

DR. M. RICHARD GELFAND PRIZE IN MARKETING. — A prize of $100, awarded by the Faculty of Management fo a final year student in the Management Concentration Group who is registered in the area of Marketing.

JOSEPH H. JACOBS PRIZE. — Value $90, established under the will of the late Joseph H. Jacobs, is awarded as a prize for Second year Accountancy.

DR. W.B. LEWIS PRIZE. — See Section 3.1.

CHESTER MACNAGHTEN PRIZES. — See Section 3.1.

* Apply to Student Aid Office

FACULTY OF MANAGEMENT PRIZES. — The Faculty of Management awards three $100 prizes to students in the Management Concentration Groups in their final year, registered in the areas of Computers and Systems, Finance, Small Business, and Quantitative Methods.

LADDIE MILLEN MEMORIAL PRIZE. — Established by Mr. J. Ernest Millen in memory of his son, Laddie Millen, who was killed in action in World War I. Three prizes will be available annually to Industrial Relations students in the Bachelor of Commerce Program. The awards will be in the amounts of $500, $300, and $200, representing first, second and third prize for a competitive essay on an industrial relations topic. The subject of the essay will be determined each year by a committee of industrial relations faculty members and will be available from the Director of the Industrial Relations Centre. The prize winning essay will be selected by this committee, which will include the Dean of the Faculty of Management and the Director of the Industrial Relations Centre. Deadline each year for submission of essays to the Director of the Industrial Relations Centre will be May 15th. If, in the opinion of the committee, no essay is considered satisfactory for a prize at any particular level, the award at that level will not be granted.

MISAWA HOMES PRIZE IN INTERNATIONAL BUSINESS. — $100 to be awarded to a student in the final year of the B.Com. program for outstanding performance in the International Business Management Concentration Group. To be awarded on recommendation of the International Business Group Adviser and the Chairman of the Faculty of Management Scholarships Committee.

WOMEN'S PERSONNEL GROUP OF MONTREAL BOOK PRIZE. — See Section 3.2.

Medals

SIR EDWARD BEATTY GOLD MEDAL. — A gold medal endowed by the late Sir Edward Beatty, former Chancellor of the University, awarded to the student in the B.Com. program with the highest distinction in Economics. Awarded, at present, on the aggregate marks for the three full year courses, Principles of Economics (or Honours alternatives), Money and Banking, and Economic Analysis (or Honours alternatives).

FINANCIAL EXECUTIVES INSTITUTE SILVER MEDAL IN FINANCE. — A silver medal is offered by the FEI Montreal Chapter to an undergraduate student graduating with the highest overall average in finance. Awarded by the Scholarships Committee of the Faculty of Management.

Loan Funds

COMMERCIAL SOCIETY LOAN FUND. — To aid one or more students who are entering their Final year in the B.Com. program to complete their course. Loans are repayable within two years after graduation.*

MORTON J. WHITE LOAN FUND. — Established in 1957 by a bequest from the late Morton J. White, to assist deserving students in the B.Com. program.*

OTHER LOAN FUNDS. — See Section 3.1.

3.9 OPEN TO STUDENTS IN THE FACULTY OF MEDICINE

For scholarships and bursaries open to undergraduates in all Faculties, see Section 3.1.

For details of scholarships, bursaries and prizes in Medicine, see Faculty of Medicine announcement.

3.10 OPEN TO STUDENTS IN THE FACULTY OF MUSIC

For scholarships and bursaries open to undergraduates in all Faculties, see Section 3.1.

Application must be made to the Dean for scholarships, bursaries, prizes, and loans available in the Faculty of Music. Forms may be obtained from the Dean's Office.

Scholarships

ELLEN BALLON PIANO SCHOLARSHIP. — Provided by the interest on two gifts of $1,500 each made, in 1928 and subsequently, by Miss Ellen Ballon, a graduate of the Conservatorium and by the Julius Block Scholarship Fund and the Cummings Foundation Scholarship Fund. In making this award the Faculty takes into account the need as well as the ability of candidates.

ANNA BRAFF AWARD. — An award of $50 annually to be presented to an undergraduate student in the Faculty of Music, who, in the opinion of the Faculty, has best performed a selection of piano works by Frederic Chopin.

EDMUND HENRY BOTTERELL AWARDS. — See Section 4.

MARGUERITE E. CHOQUETTE AWARD. — Established by a bequest of $5,000 from the estate of the late Miss Marguerite E. Choquette the income of which is to be awarded to a piano student who appears to have more than ordinary talent and requires financial assistance to continue his or her studies.

MADAME PAULINE DONALDA MEMORIAL AWARD. — $500 annually, established by a donation from the Opera Guild Incorporated in memory of the late Pauline Donalda. Awarded at the discretion of the Dean and the Faculty Scholarships Committee to a deserving student, majoring in Voice in the Faculty of Music.

* Apply to Student Aid Office

DR. D. M. HERBERT AWARD. — An annual award established in 1967 by the Baron Byng High School Graduates' Choir for a promising student enrolled in the Bachelor of Music course who is preparing to become a Choral Specialist.

ETHEL JAMIESON IVEY AWARD. — An award of $500 established in 1973 for a five-year period by the Charles H. Ivey Foundation, to be awarded to a suitable student chosen at the discretion of the Dean and the Faculty Scholarships Committee.

SIR WILLIAM MACDONALD MEMORIAL SCHOLARSHIPS. — Established in 1922 by the University. The interest upon the original endowment of $6,000 provides scholarships in Music.

MARION MAGOR MEMORIAL SCHOLARSHIP. — Founded in 1953 by the family of the late Mrs. R.J. Magor for students entering the upper years of the Bachelor of Music course.

FACULTY OF MUSIC SCHOLARSHIP FUND. — Originated through the generosity of patrons of the Martlet Concert and Ball which took place in April 1960. Awards, ranging in value from one-third to full tuition fees, are offered to students qualifying for admission to the first of any subsequent year of either degree or diploma course in music. All awards to be granted on the basis of musical talent, academic standing and financial need.

SIR WILLIAM PETERSON MEMORIAL SCHOLARSHIPS. — Established in 1921 by the University and by friends, graduates and pupils of the Faculty of Music. The interest upon the original endowment of $6,055 provides scholarships in Music.

RESSLER MEMORIAL SCHOLARSHIP. — Founded in 1950 by the late Mr. H.R. Ressler for violinists.

LAURIE ROBIN SLAPCOFF MEMORIAL AWARD. — Established in June 1971 by the family and friends of the late Laurie Robin Slapcoff and awarded at the discretion of the Dean and the Faculty Scholarships Committee. The award is to be applied towards the tuition of a deserving Voice student, preferably a full-time student in the Faculty of Music.

UNIVERSITY SCHOLARSHIPS. — See Section 3.1.

Bursaries

ANONYMOUS DONOR'S BURSARY. — Established by an anonymous donor in 1959 to cover the necessary tuition fees in Music at McGill for gifted students requiring essential financial assistance. Awarded at the discretion of the Faculty Scholarships Committee.

NATHALIE CLAIRE-FELDMAN MEMORIAL BURSARY. — Awarded to a student of marked ability on the double bass to be auditioned and chosen by the Faculty of Music.

FONDATION LES AMIS DE L'ART BURSARY. — $500 established as a contribution towards the costs of a complete course in music, renewable each year of the course for a Canadian student under 25 and of limited financial means.

BERNARD L. ISSENMAN MEMORIAL BURSARY. — Established by Mrs. Benjamin Shulman in memory of her late husband, Mr. Bernard L. Issenman. Awarded by the Faculty of Music to a full-time student requiring financial assistance to further his musical education.

LAKESHORE ORGANISTS BURSARY. — To assist financially a serious student or students of the organ who might otherwise have difficulty pursuing their organ studies. Preference will be given to a student from the Lakeshore area.

RAYMOND LALIBERTÉ BURSARY. — $125, established by Mr. Raymond Laliberté, B.Mus. (Comp.) 1970, for an academically worthy student with financial need who is majoring in Composition. Awarded at the discretion of the Faculty Scholarships Committee.

LILY LAUTERMAN MEMORIAL BURSARIES. — Established by a bequest of approximately $8,000 from the estate of the late Miss Rose Annie Lauterman, the income of which is to provide bursaries to deserving students with financial need in the Faculty of Music.

ROMANO WOODWIND BURSARY. — An annual bursary of $100 in memory of Arthur Romano, formerly a teacher in the Faculty of Music at McGill, to be awarded at the discretion of the Faculty Scholarships Committee to a deserving student in the Woodwind Section.

UNIVERSITY BURSARIES. — Full time students studying for the Licentiate in Music or for the Bachelor of Music degree are eligible for University bursaries. See Section 3.1.

WILLIAM ARTHUR WEIR MEMORIAL BURSARY. — Established by Mr. Donald Weir in memory of his late father, Mr. William Arthur Weir, for a deserving student in the Faculty of Music. Awarded at the discretion of the Dean and the Faculty Scholarships Committee.

Prizes

BOOSEY AND HAWKES PRIZE. — An award in the amount of $100 for a brass instrumentalist studying in the Faculty of Music, donated by the music publishing firm of Boosey & Hawkes (Canada) Ltd.

BROTT PRIZE. — $100, established by Professor Alexander Brott for the best integrated Chamber Music Group.

DONALDA PRIZE. — Founded by a gift of $2,500 by Madame Pauline Donalda.

CONSTANCE HAMILTON MEMORIAL PRIZE. — $100, established by Professor Helmut Blume for senior students, preferably in the branch of School Music.

DR. W.B. LEWIS PRIZE. — See Section 3.1.

SIR CHARLES W. LINDSAY PRIZE. — An annual prize of $25 established by the Provincial Chapter of the Quebec I.O.D.E. for a deserving student in the Faculty of Music.

CHESTER MACNAGHTEN PRIZE. — See Section 3.1.

CONSTANCE WILLEY PRIZE. — Established by a bequest of $1,000 by the late Mrs. Constance Willey, the annual income of which will be awarded to a piano student.

Loan Funds

GLADYS GLASSCO MEMORIAL LOAN FUND. — For students in the Faculty of Music, Established in 1954 by Mr. Gordon B. Glassco in memory of his wife.

OTHER LOAN FUNDS. — See Section 3.1.

3.11 OPEN TO STUDENTS IN THE SCHOOL OF NURSING

For scholarships and bursaries open to undergraduates in all Faculties, see Section 3.1.

Scholarships

ALUMNAE ASSOCIATION OF THE SCHOOL OF NURSING SCHOLARSHIP. — In memory of Dr. Marion Lindeburgh, the Alumnae Association has established a scholarship of $700, open to graduate, registered nurses who wish to study at the School of Nursing, and who meet the entrance requirements. Scholarships are also available for students in B.Sc. (N) and M.Sc. (Appl.) programs. Applications should be submitted by June 1 to the Chairman of the Scholarship Committee, Alumnae Association, 3506 University St., Montreal, Quebec H3A 2A7.

EDMUND HENRY BOTTERELL AWARDS. — See Section 4.

ENTRANCE SCHOLARSHIPS. — See Section 2.

J.W. McCONNELL SCHOLARSHIPS IN SCIENCE AND ENGINEERING. — See Section 2.

UNIVERSITY SCHOLARSHIPS. — See Section 3.1.

Bursaries

ALUMNAE ASSOCIATION, ROYAL VICTORIA HOSPITAL SCHOOL OF NURSING BURSARY. — A bursary of $1,000 open to graduates of the Royal Victoria Hospital School of Nursing, accepted in an approved University program. Apply before March 31 to Nursing Alumnae Office, Nurses' Home, Royal Victoria Hospital, 687 Pine Ave. West, Montreal Quebec H3A 1A1.

GOVERNMENT BURSARIES. — A limited number of bursaries are given by the Province of Quebec to nurses who wish to remain in the province, and who have been accepted for admission to the School.

MONTREAL GENERAL HOSPITAL BURSARIES. — The Montreal General Hospital has a limited number of bursaries available for nurses studying in the Baccalaureate and Master's programs. For further information apply to: The Director of Nursing, Montreal General Hospital, 1650 Cedar Avenue, Montreal, Quebec H3G 1A4.

ORDER OF NURSES OF QUEBEC BURSARIES. — A limited number of bursaries are awarded each year for post-basic study in nursing. For programs leading to the Baccalaureate degree, the amount is $1,500 and for study leading to the Master's degree, the award is $3,000. Applications should be submitted by May 15 to The Association of Nurses of the Province of Quebec, 4200 Dorchester West, Montreal, Quebec H3Z 1V2.

ROYAL VICTORIA HOSPITAL DEPARTMENT OF NURSING BURSARIES. — Bursaries are offered to senior staff members for postgraduate study. Applications should be submitted by March 1 to the Director of Nursing, Royal Victoria Hospital, 687 Pine Avenue West, Montreal, Quebec H3A 1A1.

ST. JOHN AMBULANCE ASSOCIATION OF CANADA BURSARIES. — One or more bursaries of $1,000 from the Margaret MacLaren Memorial Fund may be awarded annually to experienced Registered Nurses for study at the Master's level. This fund may also be used to serve the needs of student nurse applicants with preference given to those with St. John Ambulance affiliation. Applications must reach National Headquarters not later than May 1 addressed to the Chairman of Bursary Funds, 321 Chapel Street, Ottawa, Ontario. K1N 7Z2.

UNIVERSITY BURSARIES. — See Section 3.1.

VICTORIAN ORDER OF NURSES FOR CANADA BURSARIES. — The Victorian Order of Nurses for Canada offers bursaries of $1,800 to nurses enrolling at a Canadian university in a diploma course or in the final year of a basic or post-basic degree program which includes preparation in public health nursing. Bursary recipients agree to work one year for the Victorian Order in any branch where their services are required. Inquiries to Victorian Order of Nurses for Canada, 5 Blackburn Ave., Ottawa, Ontario K1N 8A2.

Prizes

LEXY L. FELLOWES MEMORIAL PRIZE. — An annual prize of $100 to be awarded to a student of high academic and professional achievement, in

the Bachelor of Nursing Course, on the recommendation of the School.

Loan Funds

KELLOGG FOUNDATION LOAN FUND. — Established through the generosity of the Foundation to assist graduate nurses who have unexpected expenses while registered in courses at the School. Consult the Director of the School of Nursing.

OTHER LOAN FUNDS. — See Section 3.1.

3.12 OPEN TO STUDENTS IN THE SCHOOL OF PHYSICAL AND OCCUPATIONAL THERAPY

For scholarships and bursaries open to undergraduates in all Faculties, see Section 3.1.

Scholarships

ENTRANCE SCHOLARSHIPS. — See Section 2.

J.W. McCONNELL SCHOLARSHIPS IN SCIENCE AND ENGINEERING. — See Section 2.

UNIVERSITY SCHOLARSHIPS. — See Section 3.1.

Prizes

EDMUND HENRY BOTTERELL AWARDS. — See Section 4.

CANADIAN ASSOCIATION OF OCCUPATIONAL THERAPISTS' AWARD. — Presented to the student with the highest standing in theory throughout the B.Sc. (Occ. Ther.) program.

CANADIAN PHYSIOTHERAPY ASSOCIATION BOOK PRIZE. — Awarded to the student with the highest standing throughout the B.Sc. (Phys. Ther.) program.

JEANNETTE HUTCHISON PRIZE. — Presented by the Professional Corporation of Occupational Therapists of Quebec to the student with the highest standing in clinical application of Occupational Therapy throughout the B.Sc. (Occ. Ther.) program.

CAROL RUTENBERG-SILVER MEMORIAL AWARD. — Presented to the student with the highest standing in the final year of the B.Sc. (Phys. Ther.) program.

LOAN FUNDS. — See Section 3.1.

3.13 OPEN TO STUDENTS IN THE FACULTY OF RELIGIOUS STUDIES.

For scholarships and bursaries open to undergraduates in all Faculties, see Section 3.1.

W.M. BIRKS AWARDS. — These awards of $100 each to the students graduating with the best records in the B.Th., S.T.M. and M.A. (Religious Studies) programs.

SAMUEL FINLEY MEMORIAL SCHOLARSHIP. — Usually $150, available to a student enrolled in the Faculty of Graduate Studies and Research who is pursuing advanced studies in religion or theology, awarded at the discretion of the Dean of Religious Studies.

HOUSTON BURSARY. — Value $400, the bequest of Thomas Houston, for students studying for the ministry of the Presbyterian Church in Canada or the United Church of Canada, and preference is given to candidates whose mother tongue is French. Awarded by the Faculty of Religious Studies and open to students in the Faculty of Arts and the Faculty of Religious Studies.

DR. W.B. LEWIS PRIZE. — See Section 3.1.

CHESTER MACNAGHTEN PRIZES. — See Section 3.1.

GORDON R. STEPHEN JR. MEMORIAL BURSARY. — Established in 1968 to provide bursary assistance for students in the Faculty of Religious Studies for purposes of assisting any student who might not otherwise be able to obtain a university degree and who preferably has attended Weredale House. Awards are made by the Student Aid Office on the recommendation of the Faculty of Religious Studies.

NEIL STEWART PRIZE. — A $200 prize, established by Mr. Neil Stewart of Vankleek Hill in 1878. Awarded on the recommendation of the Faculty of Religious Studies to a student or students studying biblical Hebrew and registered in that Faculty.

UNIVERSITY SCHOLARSHIPS. — See Section 3.1.

LOAN FUNDS. — See Section 3.1.

Students of the Faculty of Religious Studies who are registered also in the Montreal Diocesan Theological College, in the United Theological College, or in the Presbyterian College, will be eligible for prizes, scholarships, and bursaries as announced in the calendars of these institutions.

3.14 OPEN TO STUDENTS IN THE FACULTY OF SCIENCE

For Entrance Scholarships, see Section 2.
For scholarships and bursaries open to undergraduates in all Faculties, see Section 3.1.

General Regulations in Science

1. No applications are required. The awards are made by the Science Scholarships Committee on the basis of examination standings.
2. Unless restricted by the deed of gift or faculty regulations the awards are open to all students studying for the B.Sc. degree.
3. Normally only those students who have completed at least 30 credits in the academic year preceding the award will be eligible for scholarships.
4. Scholarships will be awarded only if an adequate standard is attained for scholarship recognition.
5. If in any university year there is not a sufficient number of candidates showing adequate merit, any one or more of the scholarships offered for competition may be given to more deserving candidates in another year.
6. In order to retain a scholarship a successful candidate must proceed regularly with a university course to the satisfaction of the Faculty.

Scholarships

MARGARET JANE ALLAN SCHOLARSHIP. — Bequeathed in 1929 to the Royal Victoria College by Mrs. Agnes W. Allan. Value $450, available annually for award to a woman student showing high academic merit in the work of the initial year of the B.Sc. program.

EDMUND HENRY BOTTERELL AWARDS. — See Section 4.

ROBERT BRUCE SCHOLARSHIP. — $100, tenable for two years, bequeathed by the late Robert Bruce, of Quebec City. Open to students in the Faculty of Arts, the Faculty of Science or the Faculty of Management and awarded for high standing at the end of the initial year. Awarded by the University Scholarships Committee upon recommendations of the faculties concerned.

CHEVRON STANDARD LIMITED GEOLOGICAL SCHOLARSHIP. — $500 awarded by the Scholarships Committee of the Faculty of Science to aid an outstanding student to complete his final year in Geology or Solid Earth Geophysics. Preference given to students interested in oil exploration and production.

COMINCO SCHOLARSHIPS. — To assist in ensuring a continuing supply of qualified graduates in fields vital to industry in Canada, Cominco Ltd. has established a program of twenty-four scholarships at specified universities in Canada to assist students in financing the final two years of their undergraduate course. Two of these scholarships are awarded annually in the form of two-year awards of $800 each per year at McGill University by the University Scholarships Committee upon the recommendations of the departments concerned. Open to students who in the fall will enter the penultimate undergraduate year of a course leading to a degree in Honours Geology, Chemical Engineering, Geological Engineering, Mining, Mineral Engineering, Mechanical Engineering, Metallurgy, Metallurgical Engineering, Soil Science, or Agronomy. Renewals for the second year will be subject to attainment of academic standards satisfactory to the University Scholarships Committee.

MARION McCALL DALY AWARD. — See Section 4.

DOW-HICKSON SCHOLARSHIPS. — Annual value, not less than $1,000 each. Established in 1957 by a bequest from the late Dr. J. William A. Hickson and awarded to students entering the penultimate or the Final year of the Honours courses in English Literature, Philosophy or Psychology. Awarded by a joint committee of the scholarships committees of the Faculties of Arts and of Science upon the recommendations of the departments concerned.

GEORGE HERRICK DUGGAN MEMORIAL SCHOLARSHIPS. — See Section 2.

R.P.D. GRAHAM SCHOLARSHIPS AND MEDAL. — Endowed by former students of Dr. R.P.D. Graham, Professor Emeritus of Mineralogy, for students entering an intermediate year or the Final year of the B.Sc. course and the Second or Third year of the Mining Engineering course. Awarded by the University Scholarships Committee upon the recommendations of the Chairmen of the Departments of Geological Sciences and Mining Engineering and Applied Geophysics. A bronze medal bearing a likeness of Professor Graham is given to the most highly qualified student receiving one of these awards.

WILLIAM HENRY HOWARD SCHOLARSHIPS. — Three scholarships of $1,000 each bequeathed in 1955 by the late Mrs. Florence P. Howard in memory of her husband. Open to undergraduate and graduate students in Metallurgy, Chemical Engineering and Geology. Awarded and renewable by the University Scholarships Committee upon the recommendations of the departments concerned for scholastic ability and general promise.

INCO PARTICIPATING SCHOLARSHIPS. — The International Nickel Company of Canada, Limited, provides annually fifty awards at Canadian universities to students who in the fall will enter the penultimate undergraduate year of a course leading to a degree in Chemistry, Geology

(including Geophysics and Geochemistry), and Chemical, Civil, Electrical, Mechanical, Metallurgical and Mining Engineering. Each award covers tuition fees plus a grant of $300 for miscellaneous expenses and a grant-in-aid of $500 to the department. Recipients may also request to undertake a summer orientation program with the Company in operations allied to their field of study. Renewed for one additional year provided the student satisfies the requirements for the award. Students must be recommended by the department, and no more than two applications will be considered from each department of any university. Further information may be obtained from the Scholarships Office. Applications must be submitted by January 15.

FREDERIC J. LE MAISTRE AWARD. — Value $200, available annually for award to a student achieving high academic merit in the penultimate year of the Honours Chemistry course. Awarded by the Faculty of Science Scholarships Committee on the recommendation of the Department of Chemistry.

LOGAN SCHOLARSHIPS. — Two scholarships of $200 each, one for work in Geological Sciences and the other for work in Botany or Zoology, open to men and women entering an intermediate year or the Final year of the undergraduate course. Awarded by the Faculty of Science on the recommendations of the Departments of Geological Sciences and of Biology.

SIR WILLIAM MACDONALD SCHOLARSHIPS. — Two scholarships of $500 each, open to all students entering an intermediate year or the Final year.

J.W. McCONNELL SCHOLARSHIPS IN SCIENCE AND ENGINEERING. — Made possible through the generous donation of the late Mr. J.W. McConnell, awarded to students proceeding to degrees in any field of Science or Engineering (including Architecture) and renewable each year provided academic standing satisfactory to the University Scholarships Committee is maintained. Candidates must be Canadian citizens or landed immigrants, and on proof of need, may receive up to full tuition fees plus the cost of board, residence and books.

Students in Science are eligible for these scholarships provided they have received a University Scholarship. They should apply by filling out an Application for Financial Aid, which may be obtained from the Student Aid Office.

McGILL ALUMNAE CARRIE DERICK SCHOLARSHIP. — Established in honour of the late Professor Carrie M. Derick, B.A. 1890, M.A. 1890, first woman professor at McGill. Awarded annually to a distinguished woman student, the Scholarship has a maximum value usually not exceeding $500 and a minimum value of $100. The honorary $100 is awarded automatically and if further supplementary scholarship assistance is required, the winner of the Scholarship is asked to consult the Student Aid Office.

McGILL ALUMNAE 75th ANNIVERSARY SCHOLARSHIP. — Established in honour of the Alumnae Society's 75th anniversary. Awarded annually to a distinguished woman student, the Scholarship has a maximum value usually not exceeding $500 and a minimum of $100. The honorary $100 is awarded automatically and if further supplementary scholarship assistance is required, the winner of the Scholarship is asked to consult the Student Aid Office.

MAJOR HIRAM MILLS SCHOLARSHIP. — $100, open to students in any of the biological sciences including Anatomy, Biochemistry, Botany, Genetics, Physiology, Microbiology and Zoology.

ANNE MOLSON SCHOLARSHIP. — $200, open only to men and women students in the Physical Sciences proceeding from the penultimate year into the Final year. Awarded by the Faculty of Science on the recommendation of the Departments of Physics, Chemistry, and Mathematics.

MOYSE TRAVELLING SCHOLARSHIPS. — Founded by the late Right Honourable Lord Atholstan, to commemorate the "splendid services of Dr. Charles E. Moyse, for forty-two years Professor of English, during sixteen of which he was Dean of the Faculty of Arts and Vice-Principal of the University." Two scholarships, normally of $2,000 each tenable for one year. One scholarship to be awarded by the Faculty of Arts for distinction in literary subjects and the other by the Faculty of Science for distinction in scientific subjects.

In the absence of applicants of sufficient merit in either of the faculties, applications from final year students in, or graduates of, other faculties of the University may be considered.

If there is no winner in one of these faculties, both scholarships may be awarded to applicants in the other faculty. Holders must devote the year of tenure to advanced study, preferably in a British or European university, but not to the exclusion of other institutions approved by the Faculty of Arts or of Science. Applications, whether from graduates or from students in the final year of the undergraduate course, should reach the Dean of the Faculty of Arts or of Science not later than April 1. Applications should be accompanied by:

(1) the names of two referees who are familiar with the applicant's work; (2) a detailed and comprehensive statement of the applicant's proposed course of study; the institution or centre at which he, or she, proposes to study; (3) a statement of the applicant's age and nationality.

Awards will be made after the results of final examinations in the final year of the undergraduate course have been determined.

PENHALLOW SCHOLARSHIP IN BOTANY. — $235, open to men and women entering an inter-

mediate year or the Final year of the undergraduate course. Awarded by the Faculty of Science on the recommendation of the Department of Biology.

PRINCE OF WALES SCHOLARSHIP. — $150, open to students proceeding from the penultimate year into the Final year. Awarded for general distinction by the Faculty of Science on the student's complete academic record.

JANE REDPATH EXHIBITION. — Value $170, founded by the late Mrs. Redpath, to maintain an exhibition in Arts or Science. Awarded on the results of the initial year to the student with the highest average on the year's work. Awarded by a joint committee of the scholarships committees of the Faculties of Arts and of Science upon the recommendations of each faculty.

CARL REINHARDT SCHOLARSHIPS AND BURSARIES. — Established from the estate of the late Carl Reinhardt. To be used for scholarships or bursaries for undergraduate students in the Departments of Physics and Geological Sciences, and for scholarships or bursaries or in the support of their research for graduate students. Awards are made by the Fellowships Office, Faculty of Graduate Studies and Research, on the recommendations of the Chairmen of the departments concerned. Any amount not used by one of the departments in any year may be taken up by awards in the other department if suitable candidates are available.

DR. JOSEPH TANZMAN AWARD. — Established in 1975 in honour of Dr. Joseph Tanzman, M.D. 1927, and to be awarded to a medical student in any given year from the Province of New Brunswick, as a preference. If in any year no such candidate is available, the award may be made to any deserving student in the Faculty of Science. Awarded by the Scholarships Committee of the Faculty of Medicine or Science as the case may be.

UNIVERSITY SCHOLARSHIPS. — See Section 3.1.

ROY M. WOLVIN MEMORIAL SCHOLARSHIPS AND BURSARIES. — Two scholarships of $375 each and a number of bursaries are given by Mrs. Roy M. Wolvin in memory of her husband. One scholarship is restricted to men undergraduates in the Faculty of Engineering, which is awarded by the Faculty Scholarships Committee. The other scholarship is restricted to women undergraduates in the Faculty of Arts, the Faculty of Science, or the Faculty of Management, and is awarded by the University Scholarships Committee upon recommendations of the faculties concerned. The bursaries are open to students in any undergraduate faculty who have a good academic record and need financial assistance. Apply for bursaries to the Student Aid Office.

Bursaries

ROBERT BRUCE BURSARIES. — Several bursaries of $100 each are open each year to "young men and women of promising abilities but of straitened circumstances in Arts, Science, or Engineering."*

CANADIAN TITANIUM PIGMENTS LIMITED BURSARIES. — Open to Canadian students in any year of the Faculty of Engineering or the Faculty of Science. Awarded on academic merit and financial need.*

DELTA PHI EPSILON SORORITY BURSARY. — Value $100, founded in memory of Edith Silver. Open to a deserving women student entering the penultimate year of the Faculty of Arts or of Science.*

HON. ROBERT JONES BURSARY. — One or more bursaries not exceeding $250 each in any one year are granted to needy students in the Faculty of Arts, Science or Engineering.*

Prizes

HARRY BARKER MEMORIAL PRIZE IN ENGLISH. — Value $150, bequeathed by the late Miss Dinah Lee in memory of the late Mr. Harry Barker, awarded to the student with the highest standing in English in an initial year. Awarded on the recommendation of the Department of English, by whichever Faculty Scholarships Committee is appropriate.

CHEMICAL INSTITUTE OF CANADA SILVER MEDAL AND BOOK PRIZE. — Available annually for award to a student achieving high academic merit in the penultimate year of the Honours Course in Chemistry.

FANTHAM MEMORIAL PRIZE IN ZOOLOGY. — $180, established by a bequest from the late Dr. Annie Fantham in memory of Professor H.B. Fantham, her late husband. Available annually for award to a graduating student achieving high academic merit in a Zoologically oriented Biology program.

DR. WILLIAM H. HATCHER PRIZE IN CHEMISTRY. — $25, established by the Department of Chemistry and awarded to the student with highest standing in Elementary Organic Chemistry, in which Dr. Hatcher lectured for so many years.

DR. W.B. LEWIS PRIZE. — See Section 3.1.

LOGAN PRIZES IN BOTANY AND ZOOLOGY. — $50, awarded as a prize or prizes on the recommendation of the Department of Biology for original summer collections. Candidates should consult the Department concerning the collections to be made.

ANNIE MACINTOSH PRIZE. — Present value $150. Endowed by friends and pupils of the late

* Apply to Student Aid Office

Annie Macintosh and by a special gift of the late Miss I.G. Macintosh. Offered as a prize or prizes to women students in such subject or for such work as the Faculty may determine.

CHESTER MACNAGHTEN PRIZES. — See Section 3.1.

ANNE MOLSON PRIZE IN CHEMISTRY. — $150, available annually for award to a graduating student achieving high academic merit in the Honours program in Chemistry.

E.G.D. MURRAY PRIZE IN MICROBIOLOGY. — $100, established by a number of friends, ex-students and ex-colleagues of the late Professor E.G.D. Murray to perpetuate his name at McGill. Available annually for award to a graduating student achieving high academic merit in the Honours program in Microbiology and Immunology.

BORIS MUSKATOV PRIZE IN PSYCHOLOGY. — An annual prize of $85 has been endowed by Miss Serafina Muskatov in memory of her brother, Boris Muskatov, who died on January 9, 1948, while a student. This prize is offered to a student who has completed the penultimate year in the Faculty of Arts or of Science and has done the best work in the subject of Psychology. Awarded on the recommendation of the Department of Psychology, by whichever Faculty Scholarships Committee is appropriate.

SUSAN PELLETIER MEMORIAL PRIZE IN PSYCHOLOGY. — Value $100, established by her classmates in memory of Susan Pelletier, an honours student in psychology who died as the result of an accident. To be awarded to a student on conclusion of the penultimate year of the Psychology Honours Program. The award is to be made by the Faculty of Arts or Science Scholarships Committee, whichever is appropriate, on the recommendation of the department.

PENHALLOW PRIZE IN BOTANY. — $85, endowed by the Arts Undergraduate Society in 1911, and available annually for award to a graduating student whose complete record shows the highest merit in Botany. At least 24 credits in the subject must have been taken and Honours students in Biology will receive preference. Awarded by the Scholarships Committee of the Faculty of Science on the recommendation of the Department of Biology.

CLIFFORD B. PURVES PRIZE IN CHEMISTRY. — $250, established by the McGill Student Chapter of the Chemical Institute of Canada in memory of the late Professor Clifford B. Purves. Awarded by the Scholarships Committee of the Faculty of Science on the recommendation of the Department of Chemistry, to the student with the highest average mark in the penultimate year of the Chemistry Major Program.

SOCIETY OF CHEMICAL INDUSTRY MERIT AWARDS. — Three Merit Awards consisting of a gold key and a year's subscription to "Chemistry and Industry" awarded to the three graduating students who achieve the best results in: (a) the B.Sc. course with Honours in Chemistry, or joint Honours in Chemistry and some related science; (b) the B.Eng. course in Chemical Engineering; (c) the Honours course in Biochemistry. Awarded by the Scholarships Committees of the Faculties of Science and Engineering, on the recommendation of the Chairmen of the departments concerned.

Medals

The following medals are awarded to the graduating students who stand highest in the First Class Honours List of the subjects named, provided the Faculty so recommends to Senate:

GOVERNOR-GENERAL'S SILVER MEDAL, awarded to the student standing highest among those graduating "with great distinction" in a major or faculty program of the Faculty of Arts or of Science. Awarded by a joint committee of the scholarships committees of the Faculties of Arts and of Science upon the recommendations of the faculties concerned.

LOGAN GOLD MEDAL, for Geology or Solid Earth Geophysics.

MAJOR HIRAM MILLS GOLD MEDAL, for Biological Sciences.

ANNE MOLSON GOLD MEDAL, for Mathematics and Natural Philosophy.

HORACE WATSON GOLD MEDAL, for Physics, awarded to the student graduating with the highest First Class standing in the Honours Physics Course.

Loan Funds

McGILL SOCIETY OF ONTARIO LOAN FUND. — Established in 1938 by the Ontario Branch of the Graduates' Society of McGill.*

OTHER LOAN FUNDS. — See Section 3.1.

3.15 OPEN TO STUDENTS IN THE SCHOOL OF SOCIAL WORK

UNIVERSITY SCHOLARSHIPS. — See Section 3.1.

Bursaries and Loans

General information on bursaries and/or loans may be obtained from the Student Aid Office.

Some sources exist for both loans and bursaries through the School. Inquiries may be made at the time of application for admission to the School. Since the School does not receive all the resources for bursary and/or loan purposes until late during

*Apply to Student Aid Office

the first term, students should endeavour to make other arrangements for their financial needs, whenever possible, prior to entering the School.

Usual funds available from the School include:

1) Frances Anderson Memorial Bursary
2) Alumni Bursary.

Overseas students should inquire of their governments concerning the availability of United Nations, Colombo Plan, or their country's own study grants.

Provincial

Students registered in Social Work programs are eligible for provincial assistance from their Departments of Education as outlined in Section 1.4.

Voluntary Agencies

Local or national voluntary agencies often offer bursaries similar to those of the Provinces. Information may be obtained from the School.

4 Women Students at McGill

Scholarships

MARGARET JANE ALLAN SCHOLARSHIP. — See Section 3.14.

EDMUND HENRY BOTTERELL AWARDS. — Two awards of $450 each, bequeathed by the late Mrs. Florence A. Redpath. Awarded by the University Scholarships Committee to women students who have completed the initial year and are entering the intermediate year(s) in the faculties of Arts, Education, Engineering, Management, Music, Science and the Schools of Nursing and Physical and Occupational Therapy. At present the awards are made to students whose academic interests and record combined with personal qualities indicate marked promise.

MARION McCALL DALY AWARD. — $400, awarded each year to a woman student who has completed two years at McGill and is continuing in a third year in the Faculty of Arts, the Faculty of Science, the Faculty of Management, or the Faculty of Engineering (including Architecture) at the University. Awarded by the University Scholarships Committee upon the recommendations of the faculties concerned. In making the award the following is taken into account: (a) the candidate's promise of making a definite contribution to Canadian life, (b) financial need, and (c) academic record.

McLENNAN-ETHEL HURLBATT SCHOLARSHIP. — Established in memory of the late Miss Ethel Hurlbatt by a legacy from the late Miss Isabella McLennan to the Royal Victoria College. Awarded by the University Scholarships Committee with the approval of the Warden of the Royal Victoria College or her delegate to a woman student on the basis of academic record and financial need.

MARGARET WILSON SCHOLARSHIPS. — See Section 3.1.

ROY M. WOLVIN MEMORIAL SCHOLARSHIP. — See Section 3.2.

Bursaries

ALPHA OMICRON PI BURSARY. — A bursary of $100 is given by the Alpha Omicron Pi Mothers' Club for a woman student, resident in Royal Victoria College or non-resident. The award is made by the Student Aid Office on the recommendation of the Warden of the Royal Victoria College to a candidate with good academic standing and financial need.

DELTA PHI EPSILON SORORITY BURSARY. — See Section 3.2.

FROTHINGHAM BURSARIES. — See Section 3.1.

HELEN REYNOLDS BURSARY. — Awarded annually by the Student Aid Office in consultation with the Warden of the Royal Victoria College to a woman undergraduate in any degree course who has completed at least one year's study on this campus. The award is made to a student in financial need who has satisfactory academic standing.

MURIEL V. ROSCOE BURSARY. — Awarded annually by the Student Aid Office in consultation with the Warden of the Royal Victoria College to a woman undergraduate in any degree course who has completed at least one year's study on this campus. The award is made to a student in financial need who has satisfactory academic standing.

Prizes

DORA FORSYTH PRIZE. — $125, bequeathed by the late Miss Jeanie Forsyth for English Literature. Open to women only and awarded to a candidate recommended by the Department of English and approved by the Faculty of Arts.

ANNIE MACINTOSH PRIZE. — Present value $150, endowed by friends and pupils of the late Miss Annie Macintosh. Offered as a prize or prizes to women students in such subject or for such work as the Faculty of Science may determine.

WOMEN'S PERSONNEL GROUP OF MONTREAL PRIZE. — See Section 3.2.

LOAN FUNDS. — See Section 3.1.

Special Awards administered by a Committee of the Alumnae Society

McGill Alumnae Scholarships

The following scholarships have been established by the McGill Alumnae Society and are awarded annually to distinguished women students, based on recommendations from the Faculties concerned.

Arts

GEORGINA HUNTER SCHOLARSHIP. — Established in memory of the late Georgina Hunter, a member of the first graduating class of women at McGill University, the first President of the Alumnae Society, and a former Principal of the High School for Girls, Montreal.

ETHEL HURLBATT SCHOLARSHIP. — Established in memory of the late Miss Ethel Hurlbatt, a former Warden of the Royal Victoria College.

CATHERINE I. MACKENZIE SCHOLARSHIP. — Established in memory of the late Miss Catherine I. Mackenzie, B.A. 1904, former Principal of the High School for Girls, Montreal.

ISABELLA McLENNAN SCHOLARSHIP. — Established in memory of the late Miss Isabella McLennan.

SUSAN CAMERON VAUGHAN SCHOLARSHIP. — Established in honour of the late Mrs. Walter Vaughan, a former Warden of the Royal Victoria College.

Science

CARRIE DERICK SCHOLARSHIP. — Established in honour of the late Professor Carrie M. Derick, B.A. 1890, M.A. 1890, first woman professor at McGill.

75th ANNIVERSARY SCHOLARSHIP. — Established in honour of the Alumnae Society's 75th anniversary.

In Faculties other than Arts or Science

HELEN R.Y. REID SCHOLARSHIP. — Made possible by a legacy from the estate of the late Dr. Helen R.Y. Reid, B.A. 1889, LL.D. 1921, and awarded by the University Scholarships Committee to a distinguished woman student in faculties other than Arts or Science.

Each scholarship has a maximum value usually not exceeding $500 and a minimum value of $100. The honorary $100 is awarded automatically and if further supplementary scholarship assistance is required, winners of these scholarships are asked to consult the Student Aid Office.

McGill Alumnae Bursaries

Eight bursaries, of which the following five are named to honour distinguished women scholars, are awarded annually by the McGill Alumnae Society. The awards are made to women students in financial need who have satisfactory academic standing. The amount of these bursaries is determined by the Alumnae Scholarship Committee. Applications should be made to the Student Aid Office.

ISABEL BRITTAIN BURSARY. — Named in honour of Miss Isabel Brittain, B.A. 1894, M.A. 1911, twice President of the Alumnae Society and former English teacher at the High School for Girls, Montreal.

VIRGINIA CAMERON BURSARY. — Established in 1967 in memory of Miss Alice Virginia Cameron, B.A. 1925, Deputy Registrar of McGill, a former President of the Alumnae Society, Honorary Life Member of the Graduates' Society and a former President of the University Women's Club. Open to women students entering the penultimate year in the Faculty of Arts or of Science at McGill.

EUNICE PATTON HOOVER BURSARY. — Established in memory of the late Mrs. Hoover by her husband and friends.

GLADYS MURRAY BURSARY. — Established by the Alumnae Society in memory of the late Mrs. Gladys Murray, for thirty-five years Secretary to the Warden of the Royal Victoria College.

LUCIE TOUREN-FURNESS BURSARY. — Named in honour of Madame A.W. Furness, retired Associate Professor of French at McGill.

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POSTGRADUATE AWARDS, FELLOWSHIPS AND BURSARIES

1976/77

McGill University
Montreal

The University reserves the right to make changes without prior notice to the information contained in this publication, including the alteration of various fees schedules and the revision or cancellation of particular courses.

POSTGRADUATE AWARDS, FELLOWSHIPS AND BURSARIES

1976-77

The official McGill University mailing address is:
McGill University, P.O. Box 6070, Station A
Montreal, Quebec, Canada H3C 3G1

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1 FINANCING POSTGRADUATE EDUCATION

There are three main ways to finance postgraduate studies at McGill: by winning fellowships or other awards for academic merit, by working as a teaching or research assistant, or by borrowing money. This booklet contains information about all three.

Fellowships provide enough money to pay tuition fees and additional money for living expenses. Some provide extra income for dependents, and some include money paid to the university to support the students' research expenses. The total award value of a fellowship may range up to $9000; many are renewable for four or five years. A fellowship holder must usually limit his additional income-producing work.

Smaller awards based on academic merit may range in value from a scholarship for the amount of fees, down to prizes of less than $100. A winner of these smaller awards is not prevented from earning additional income. The details of the fellowships, scholarships, and prizes available to students who want to undertake postgraduate studies at McGill comprise the bulk of this book.

Assistantships

Most university departments require help from graduate students in conducting undergraduate classes and laboratories. The total work load is about 12 hours per week. Income for assistantships is being discussed as this book goes to press, and final figures have not been decided. The figure may be $3750 plus fees for a full-load (12 hours per week) assistant who does not hold a fellowship, scholarship, or research assistantship.

Some departments can offer some graduate students research assistantships, paid from research grant funds. In many cases the research can be used by the student in the preparation of his or her thesis. When students hold both teaching and research assistantships, it has been usual to adjust the income from each assistantship to assure a uniform level of support. The income figure for this arrangement is still under discussion.

In all cases the appointment of a student as a teaching or research assistant is recommended by the chairman of the department concerned on the basis of the documents supplied to the department along with the application for admission.

Loans

Canadian citizens and landed immigrants are eligible to apply for a guaranteed student loan in the province or territory where they have resided for a year preceding the date of application. In general, these loans are interest-free and do not need to be repaid as long as the recipient is enrolled in a full-time course of study. They can be accumulated over several years up to a maximum of $9800, and the repayment period may extend 9½ years. Several provinces supplement the Canada Student Loan plan with bursaries, which are non-repayable donations based on financial need, rather than on academic merit.

The addresses of the provincial and territorial authorities who administer these programs are listed in the *Loans and Bursaries* section at the end of the book.

The university and several of its departments or faculties also administer funds from which loans can be made to graduate students. These loan funds, unlike the provincial loans, are not available to finance the major part of a graduate education: they are contingency funds available to meet expenses caused by unexpected situations of short duration. In general, the loans are interest free and repayment can be deferred, as long as the student is enrolled full time in the Faculty of Graduate Studies and Research.

The names of these funds, the limiting conditions, and the application procedures are described in the *Loans and Bursaries* section of the booklet.

Further information concerning postgraduate awards and application forms for many of them may be obtained from the Fellowships Office, Faculty of Graduate Studies and Research, Dawson Hall, McGill University, P.O. Box 6070, Station "A", Montreal, Quebec H3C 3G1.

2 OTHER SOURCES OF INFORMATION

Association of Universities and Colleges of Canada. The Awards Service of the Association of Universities and Colleges of Canada, 151 Slater St., Ottawa, Ont. K1P 5N1, does not itself offer any awards but it does administer several national and international programs on behalf of Canadian and foreign donors, both private and governmental. Inquiries from students regarding financial aid can be addressed directly to the Association.

Commonwealth Scholarship and Fellowship Plan. At the request of the Government of Canada, the Association of Universities and Colleges of Canada provides a secretariat for academic administration of the Commonwealth Fellowship plan. This plan makes it possible for Canadians to undertake graduate study or research in many parts of the Commonwealth as part of a Canadian graduate degree program, in addition to bringing graduate students from other Commonwealth countries to Canada.

Students from other Commonwealth countries, in Canada on *student visas,* may apply to their home country for these fellowships. Students with *landed*

immigrant status may apply to any other Commonwealth country for these awards, with the understanding that they will return to Canada when their graduate work is completed.

Information about fellowships open to graduates of Commonwealth universities for study in other Commonwealth universities can be found in *Scholarships Guide for Commonwealth Postgraduate Students* published by the Association of Commonwealth Universities, London, and available in the Fellowships Office of the Faculty of Graduate Studies and Research, Dawson Hall.

Foundations and Private Agencies

Professional associations, foundations and companies offer financial support for the graduate student. Details about these can be found in the following publications which are available in large public libraries, university reference libraries and consulate or embassy offices.

Awards for Graduate Study and Research: perhaps the most useful to Canadian students, it lists several thousand awards available to Canadians and to those studying in Canada. It is available from Statistics Canada, (Catalog no. 81-541), Ottawa, Ont. K1A 0Z5.

Study Abroad: A UNESCO publication, it lists awards tenable in Canada, as well as in other countries.

Fellowships and Scholarships Offered by Private Donors and Foreign Governments for Canadian Students: available from the Association of Universities and Colleges of Canada, 151 Slater St., Ottawa, Ont. K1P 5N1.

Fellowships in the Arts and Sciences: published by the American Council on Education.

Annual Register of Grant Support: lists the major awards distributed by American agencies.

Grants Register: lists postgraduate awards in the English-speaking world.

Awards made by University Women's Organizations

For full information apply to the Chairman of the Fellowships Committee, c/o Canadian Federation of University Women, Suite 209A, 151 Slater St., Ottawa, Ont. K1P 5H3.

3 FELLOWSHIPS, SCHOLARSHIPS, AND PRIZES

If you are planning postgraduate studies at McGill, we suggest that you apply for one of the provincial, federal, or private fellowships available in your field of study. These are among the most valuable fellowships awarded. The University's research assistantships, teaching assistantships, and endowment funds are limited, and every student who receives support from another institution frees money for the support of other students and research at McGill.

The awards described here are divided into three groups: 1) those which can be held at McGill or elsewhere; 2) those which can be held only at McGill; and 3) those intended to support graduate study abroad, either as part of a McGill degree program or independently of McGill. The value, application date, procedure and limiting conditions are described separately for each award. A separate section lists awards made to students who want support for research and study beyond the doctoral degree level.

4 AWARDS TENABLE AT McGILL OR ELSEWHERE

The fellowship competitions in the following alphabetical list with the largest numbers of winners are the Canada Council Doctoral, the Canada Council Special M.A., the Medical Research Council, the National Research Council and the Quebec Department of Education. You should apply in whichever one or more of these competitions is appropriate to your eligibility and your field of studies. Most McGill postgraduate students will be eligible to apply in one or more of these competitions.

Students who plan postgraduate studies at another university should write directly to that university to obtain information about awards for which they may be eligible. The Fellowships Office receives notices about some of these awards, and either passes them to the appropriate departments for posting, or posts them on the bulletin board on the third floor of Dawson Hall.

Bank of Nova Scotia Bilingual Exchange Scholarships

Six annual one-year undergraduate and graduate awards are available, three to French-speaking candidates and three to English-speaking candidates. Undergraduate awards are for $1,500 tenable in the second to last year of a first university degree program. Graduate awards are for $3,000 and graduate students will be expected to outline their proposed program of study. English-speaking winners may attend any Canadian French-speaking university or college and French-speaking winners may attend any Canadian English-speaking university or college provided it is a member, or federated with, or affiliated to, a member of the Association of Universities and Colleges of Canada. Apply to Director of Awards, Association of Universities

and Colleges of Canada, 151 Slater St., Ottawa, Ont. K1P 5N1. Completed applications must be sent to the above address to arrive not later than March 1.

Sir Edward W. Beatty Memorial Scholarships for Medical Students

Available for study elsewhere to students registered for the M.D., C.M. degree in the McGill Faculty of Medicine. See the description listed alphabetically under Medicine and the Medical Sciences (section 5.9).

Bell Canada Centennial Fellowships

Up to a total of eight graduate fellowships in the amount of $3,500 to Fellow and $1,500 to University (Fellow's tuition fees will be paid out of the $1,500) will be given annually; four of which will be new awards. Candidates must be Canadian citizens or must have held landed immigrant status for one year prior to submitting an application. Applicants must be graduates of a university or college with standards accepted by the A.U.C.C. The field of study is unrestricted, but preference will be given to subject areas relevant to the scientific, political, social or economic needs of Canada. On completion of the fellowship, three copies of a thesis or reasonably detailed account of the work done should be sent to the Director of Awards, A.U.C.C., who in turn will forward two copies to Bell Canada. Apply before March 1 to Director of Awards, A.U.C.C., 151 Slater Street, Ottawa, Ont. K1P 5N1.

George A. Callbeck Scholarship

$3,000 offered by the Canadian National Silver Fox Breeder's Association for research and preparation of a thesis on the History of the Silver Fox Industry in Canada. Open to graduate students with a degree in Agriculture or Economics from a Canadian university. Apply to Chairmen of Departments of Agriculture or Economics. For further information apply to Mr. L. K. Lockerby, Canadian National Silver Fox Breeders Association, Summerside, P.E.I.

Canada Council Doctoral Fellowships

Value: $5000 or $6000.

Fields: Social Sciences and Humanities. These categories extend to undertakings of an interdisciplinary nature, but not to those closely identified with the physical and biological sciences, or with professional training.

Applications: Informative leaflets and application forms are obtainable from department offices in the social sciences, humanities, and related disciplines, from the Fellowships Office of the Graduate Faculty, or from: The Canada Council, P.O. Box 1047, Ottawa, Ont. K1P 5V8.

Due Date: Completed applications should be returned to the student's department *early in November.*

Eligibility: Canadian citizens or people who have been landed immigrants for a year. Applicants must be enrolled in or have already completed *one year of graduate studies.*

Canada Council Special M.A. Fellowships

Value: $5000.

Eligibility: Canadian citizens who are *first class honours undergraduates* in the *arts, social sciences, or humanities.*

Application: Candidates must ask a faculty member to nominate them. Nomination forms are available to candidates in the Fellowships Office, Faculty of Graduate Studies and Research.

Due Date: October 15.

Canadian Federation of University Women's Professional Fellowship

Value $2,500, open to any woman holding a degree from a Canadian university, whose domicile is in Canada (a) who wishes to spend a year at an accredited Library School, School of Social Work, College of Education or similar professional school; or (b) who wishes, after some years of experience in a chosen field or after a lapse of time away from formal study, to embark on a program leading to an advanced degree. Apply to the Chairman of the Fellowships Committee, c/o Canadian Federation of University Women, Mount Allison University, Box 69, Sackville, N.B. Applications and testimonials must be received before February 1.

Central Mortgage and Housing Corporation Graduate Fellowships

Fellowship stipends are $3000 plus tuition fees for students proceeding to a master's degree and $4,000 plus tuition fees for post-master's candidates proceeding to a doctoral degree. Tenable in a broad range of fields involved in understanding and dealing with urban regional environment. Candidates must be recommended by the University and must be Canadian citizens or landed immigrants in Canada. Application forms and information are available from Administrator, Advisory Group, Central Mortgage and Housing Corporation, Ottawa. Deadline dates: March 1 for study at Canadian universities and April 1 for study at universities outside Canada.

Chevron Standard Limited Graduate Fellowships

Five fellowships of $1,000 each tenable at Canadian universities for one year in the fields of Geological Sciences or Geophysics by male Canadian students. Apply to the Fellowships Office of the Faculty of Graduate Studies and Research. Completed forms should be returned to Chevron Ltd. before March 31.

Delta Upsilon Memorial Scholarship

Present value $3,000. Founded by the McGill Chapter of the Delta Upsilon Fraternity in memory of its members who give their lives in the Boer War, the Great War of 1914-18, and the Second World War

of 1939-45. Open to graduates of McGill University in all faculties and tenable for graduate study at any recognized university. Applications should be made by letter to the Secretary, University Scholarships Committee, Scholarships Office, F. Cyril James Building, by April 1. Letter must include details of qualifications; plans for graduate study, financial need, intended future career; and the names of two professors to whom the Selection Committee members may refer for recommendations. The usefulness to the community of the proposed studies, and the likelihood that the candidate will reflect credit on the University, will be taken into consideration.

Gulf Oil Canada Limited Graduate Fellowships

Nine fellowships of $3,500 each, plus $1,000 for research expenses. Candidates must be Canadian citizens or landed immigrants who are graduates of institutions which are members of the Association of Universities and Colleges of Canada, and are tenable at any such university. Awarded to candidates in engineering, chemistry, physics, mathematics, computer sciences, geology, geophysics, and any related sciences, business and management studies, and ecologically-oriented studies. Apply to the Director of Awards, Association of Universities and Colleges of Canada, 151 Slater St., Ottawa, Ont. K1P 5N1. Completed applications must reach the Director before March 1.

Imperial Oil Graduate Research Felowships

Five fellowships of $3,000 renewable up to three years, offered by Imperial Oil Limited to graduates of approved Canadian universities for research leading towards a Doctor's degree at any approved university in the following fields:

Pure and Applied Natural and/or Exact Sciences, including Mathematics: Three fellowships.

Social Sciences and Humanities: Two fellowships.

Applications are forwarded by the university at which the undergraduate course was followed, and application forms can be obtained from the Fellowships Office, Faculty of Graduate Studies and Research. Completed application must be submitted to the Secretary, Committee on Higher Education, Imperial Oil Limited, 111 St. Clair Avenue West, Toronto, Ont., not later than February 1.

I.O.D.E. Postgraduate Scholarships

The I.O.D.E. has established First and Second War Memorial Scholarships in order to perpetuate the memory of the men and women who gave their lives in World Wars I and II. Four scholarships are offered annually to enable students to carry on studies in History, Economics, Constitutional Government or any subject vital to the interests of the Commonwealth and six scholarships are offered for studies in the Humanities. These ten awards are tenable in any university in Great Britain or in any part of the Commonwealth and are valued at $5,000 each. Scholarships tenable in a university in Canada are valued at $3,000 each. Candidates must be Canadian citizens holding a degree from a recognized university or degree-granting college in Canada and *must have done, or be doing postgraduate work* and be or have been registered in a Graduate School.

For full details apply to the Fellowships Office, Faculty of Graduate Studies and Research. Applications must be submitted by November 15.

National Cancer Institute Research Fellowships

Fellowships from $3,500 to $8,000, plus allowance for dependent children, normally tenable in Canada, are offered in the field of cancer research to men or women graduates of approved universities. Apply on official forms to the National Cancer Institute of Canada, 25 Adelaide St. E., Toronto, Ont. by December 15.

National Research Coucil Fellowships

Post-graduate awards to assist students in undertaking graduate study and research, and post-doctorate fellowships for those wishing to add to their experience by specialized training. *Value:* $5520 to $11,220 *Fields:* agriculture, biology, chemistry, physics, geology, physical geography, mathematics, engineering and experimental psychology. *Eligibility:* At the time of application for a Fellowship, an applicant must be either a Canadian citizen or if he is a landed immigrant, he must have completed one full year of study and/or research at a Canadian university. *Application:* Forms are available in the Fellowships Office, Faculty of Graduate Studies and Research. Applications must be submitted to the students' department *early in November.*

Quebec Department of Education Fellowship

Value: $4000 to $9000. *Eligibility:* Permanent residents of Quebec for at least one year who are Canadian citizens, or who, at the time of application, have been landed immigrants for 18 months. *Fields:* All academic disciplines. *Application:* Forms and descriptive booklets will be available in each department early in the Winter Term. The university provides assistance in collating materials, collecting applications, and sending completed applications to Quebec. *Due date* varies from year to year, but completed application forms must be received in each department by mid-February.

J.H. Stewart Reid Memorial Fellowship

Value: $3000 for one year: winner may re-apply in open competition for additional years. *Field:* unrestricted, can be held at any Canadian university: *Eligibility:* Canadian citizen or landed immigrant. *Application:* Write to Awards Officer, Canadian Association of University Teachers, 66 Lisgar Street, Ottawa, Ont. K2P 0C1. The due date is 1 February.

Second-Language Monitor Program

Students who are willing to help teach English to French-speaking Canadians or *vice-versa*, outside the province in which they reside, can earn $3000 plus up to $300 transportation costs, for part-time work as a second-language monitor in connection with post-secondary or post-graduate education. For example, a French-speaking New Brunswick resident may serve as a second-language monitor at McGill, while an English-speaking Quebec resident from McGill might serve as a second-language monitor at the University of Ottawa. *Fields:* open. *Eligibility:* Canadian citizens or landed immigrants, who are enrolled in a post-secondary institution outside their province of residence. *Applications:* May be obtained from the provincial co-ordinator of the province in which you reside. Applications will be available after November 1 from the Provincial Coordinator of your province of residence and completed applications must be returned to the coordinator by December 31. The addresses of some of the provincial co-ordinators are listed below: the Fellowships Office, Faculty of Graduate Studies and Research, has a complete list.

Quebec:
M. Maurice Beaulieu
Counseiller Linguistique
Ministère de l'Education
1035 Rue de la Chevrotière
Québec G1R 5A5

New Brunswick:
Mrs. Vivianne Edwards
Department of Education
Centennial Building
Fredericton, New Brunswick
E3B 5H1

Ontario:
Mr. D.S. Bethune
Ministry of Colleges and Universities
8th Floor — Mowat Block
Queen's Park
Toronto, Ontario
M7A 2B4

Manitoba:
Mr. J.A. Duhamel
Department of Education
512A 1181 Portage Avenue
Winnipeg, Manitoba
R3G 0T3

Shell Canada Fellowships in Engineering

Maximum value $4,500. Shell Canada Limited is offering a number of fellowships for postgraduate study and research, tenable at any Canadian university, in the following fields: Chemical, Civil, Electrical, Geological, Mechanical, Metallurgical, Mining and Petroleum Engineering, and Engineering Physics. Available to Canadian citizens or landed immigrants, under 25 years of age, who have completed with high honours a first degree in engineering and have completed, or expect to complete during the current academic year, at least one year of postgraduate research in one of the specified fields and who plan to complete a doctorate in Canada. In exceptional cases, graduates of Canadian universities may be considered without having carried out a year of postgraduate study. Applications should be submitted by January 15. Application forms may be obtained from the Fellowships Office, Faculty of Graduate Studies and Research.

Steel Company of Canada Graduate Research Fellowships in Metallurgy

Four fellowships of $5,000 for metallurgical research in Canadian universities are granted each year, $4,000 to the winner and $1,000 to the university attended. Candidates must be Canadian citizens or have held landed immigrant status for one year prior to submitting application, and must be graduates of a Canadian university or college which is a member of the Association of Universities and Colleges of Canada. Apply to the Association of Universities and Colleges of Canada, 151 Slater St., Ottawa, Ont. K1P 5N1. Completed forms must arrive at the above address before March 1.

Transportation Development Agency Fellowships

This federal agency offers postgraduate fellowships for the support of thesis research in a broad range of fields related to transportation. *Value:* $4650 plus fees. The fellowship may be held for one year while studying for the Master's degree, and renewed up to a maximum of two more times while studying for the Ph.D. *Fields:* work relating to any aspect of transportation. *Eligibility:* Canadian citizens or landed immigrants; only citizens may hold the fellowship outside Canada. *Applications:* Forms may be obtained from the Fellowships Office, Faculty of Graduate Studies and Research. The due date varies, but will be in *early January.*

5 AWARDS TENABLE AT McGILL ONLY

5.1 Any Faculty or Department

Students who apply for a fellowship on a McGill form sent directly to the Fellowships Office, Faculty of Graduate Studies and Research, will be considered for all the fellowships, awarded directly by the Faculty of Graduate Studies and Research, for which they are eligible. These do **not** include the fellowships for a limited field of studies which are awarded on the recommendation of schools or departments in the University. Application for these fellowships is made directly to the school or department concerned.

Max Binz Bursaries for Foreign Students

Established by the estate of the late Max Binz. These Bursaries are valued at $1000 per annum and are renewable, but are not normally tenable concurrently with a major scholarship or fellowship. The Binz Bursaries are intended to help defray the expenses of graduate students coming to McGill from overseas countries (including South and Central America and Mexico). One of the purposes of the award program is to encourage the continued attendance at McGill of students of a wide variety of cultural backgrounds. According to the conditions of the award, foreign nationals who are Canadian landed immigrants (and therefore eligible for several categories of Canadian financial assistance) are not eligible for the Bursaries. Also, the applicant **must be in residence at McGill** at the time of application. Application forms can be obtained from the Fellowships Office, Dawson Hall, and must be submitted by April 1.

Friends of McGill Fellowship

Value: $4500 plus fees. Tenable for one year, renewable in competition with other applicants. Open to a graduate student in any discipline who is a citizen of the United States of America. The fellowship is made available through the McGill Development program by the Friends of McGill, Inc., New York. Applications: apply to the Faculty of Graduate Studies and Research by February 1.

Graduate Faculty Research Fellowships

Value: $5000 per annum. Funded by generous contributions to the McGill Development Program, these Fellowships are tenable by full-time graduate students working on research Masters' and Ph.D. degrees. There are no citizenship or landed immigrant requirements. Application forms may be obtained from the Fellowships Office, Dawson Hall, and should be returned before February 1. The selection of up to twelve Fellows will be announced on or about April 1.

Graduate Faculty Summer Research Fellowships

A limited number of fellowships of up to $1,000 each are available through the generosity of the McConnell Foundation. These are intended to enable graduate students in Humanities, Social Sciences, Science and Engineering to undertake Summer research towards the Masters or Ph.D. degree. Apply in writing, giving details of the research proposed and the budget required to the Fellowships Office, Dawson Hall before April 1. Applications must be supported by a letter of recommendation from the candidate's research adviser.

Harold H. Helm Fellowships

Tenable by holders of a bachelor's degree from Princeton University for post-graduate study in any subject at McGill. Value $4500 plus fees. Normally non-renewable, but may be renewed for a second year in exceptional circumstances. Requests for applications for the "Helm Fellowship" should be made to the McGill Graduate Faculty Fellowships Office. Completed applications should be received before February 1, and candidates will be notified of the results of the competition on April 1.

J.W. McConnell Memorial Fellowships

These fellowships were established by the J.W. McConnell Foundation to support postgraduate studies and research at McGill University, and so to strengthen, in quality and in numbers, the academic staffs of Canadian universities and schools. The fellowships may be held by students registering in any postgraduate research program at McGill, but only those whose homes are in Canada or who intend to make their homes in Canada, are eligible to apply. The fellowships are intended to cover full fees, living expenses, the cost of books and such travelling as a Fellow's studies may require. The normal value of a first-year award is $4,500 plus fees, and further allowances are payable for dependents. The initial award is normally for a period of two years, but the fellowships are intended to carry a student through to a doctoral degree, and may normally be held up to the fifth year of a doctoral program (and for not more than five years). Fellows will be expected to spend the full calendar year (with the exception of a month's summer holiday) on their studies, and may not accept any remunerative appointment during the tenure of the fellowship without permission. Application forms may be obtained from the Fellowships Office of the Faculty of Graduate Studies and Research and completed forms must be returned to this office before February 1.

Isabella C. McLennan Fellowship

$900. Awarded by the Graduate Faculty Fellowships Committee to a woman student in the Faculty of Graduate Studies and Research on the basis of academic merit and financial need. Apply to the Fellowships Office of the Graduate Faculty before February 1.

Solvay Fellowship

Value $3,500 plus tuition fees, offered for the first year of study in the Faculty of Graduate Studies and Research. Tenable in any Department of the Faculty, and open to men and women equally. The holder must have graduated in any undergraduate faculty of McGill in the session prior to that for which the award is given, and must obtain permission to proceed to graduate study. No teaching duties are required of the holder, who may not hold any other fellowship or bursary, nor receive a salary for teaching or other duties, during his tenure. Apply to the Fellowships Office, Dawson Hall, before February 1.

5.2 Agriculture and the Biological Sciences

Philip Carpenter Fellowship in Biology

Value $1,200, established in 1892 by Mrs. Philip P. Carpenter to provide " a postgraduate teaching fellowship or scholarship in Natural Science or some branch thereof in the Faculty of Arts of McGill College." Awarded to a graduate who has been in residence for at least one academic session and may be held in conjunction with a departmental demonstratorship. No application necessary. The Department makes the appointment from its current cadre of Demonstrators.

Lynden Laird Lyster Award in Parasitology

Value approximately $3,000. Open to graduates of any university admitted as candidates for a Master's or Doctor's degree in Parasitology at McGiill. Apply by May 1 to the Dean of the Faculty of Graduate Studies and Research through the Director of the Institute of Parasitology.

Sir Vincent Meredith Fellowship in Agricultural Economics

$2,500 per year, tenable for a two-year period. Candidates must qualify for graduate work in Economics at the Ph.D. level and must pursue research or thesis work on an approved subject in the area of Agricultural Economics. Limited teaching or other duties are required. Apply to the Department of Agricultural Economics, Macdonald College, Quebec H0A 1C0, before February 1.

David Stewart Memorial Fellowship

One fellowship in the Biological Sciences has been established by a bequest of the late Miss Agnes Stewart in memory of her father, the late David Stewart. Awarded to candidates who demonstrate ability of a high order and who are likely to enter a career of university teaching. Value $3,500 plus tuition fees for students in the upper years. Awarded for one year only but holders may apply for renewal. Apply to the Fellowships Office, Dawson Hall, before February 1.

Walter M. Stewart Postgraduate Scholarship in Agriculture

Value $1,000, established to permit promising students from the Faculty of Agriculture of Laval University to undertake postgraduate studies at Macdonald College. Apply to the Dean of the Faculty at Laval before May 1 each year. Not awarded to students who would, including this scholarship, be in receipt of scholarships, fellowships, assistantships, etc. to a value of $2,000 or more per annum.

Arthur Willey Memorial Bursary

Value $540. To be awarded on the recommendation of the Biology Department No application necessary.

5.3 Architecture

A. F. Dunlop Scholarships

Two travelling scholarships, value $1,500 each bequeathed by the late Mrs. Catherine A. Dunlop for students graduating from the McGill School of Architecture. Apply, stating proposed study, localities to be visited and date of departure, to the Director of the School before March 31. Selection is made by a Committee of Staff of the School of Architecture.

Hugh McLennan Memorial Scholarship

Established by the Hon. John Stewart McLennan, Dr. Francis McLennan and Miss Isabella McLennan in memory of Hugh McLennan son of the Hon. John Stewart McLennan, killed at the Battle of Ypres in 1915. Value $2,000, awarded to the student who has maintained the highest standing throughout his studies in the McGill School of Architecture. Selection is made by a Committee of Staff of the School of Architecture.

5.4 Education

Coll McFee Memorial Scholarship

Established in 1968 from a bequest of the late Miss Julia Beatrice Anderson McFee in honour of her father, Coll McFee and her brother, Malcolm Charles Coll McFee, B.A. (1905), B.Sc. (1908), M.Sc., to a graduate student proceeding to the Master of Education (Chemistry) degree, or if a meritorious candidate does not apply, to a graduate of the McGill Chemistry course who is proceeding to an M.Sc. or Ph.D. degree in the Department of Chemistry. Send applications to the Chairman, Department of Chemistry, before June 1.

Quebec Department of Education Scholarships

The Quebec Department of Education awards competitive scholarships of $1,200 per year to students of high academic standing who are prepared to enrol in a three-year program leading to a Class I Teaching Diploma and an M.A. in education or in a subject which is taught in school. Apply to the Student Aid Service, Parliament Buildings, Quebec, Que.

5.5 Humanities and the Social Sciences

Bronfman Fellowships in Commerce and Economics

The Faculty of Graduate Studies and Research offers two fellowships of $2,000 each plus tuition fees to men and women, preferably with research experience, who are graduates in Commerce or Economics from accredited universities. The holders are entitled to apply again in a subsequent year, will be expected to be in residence at McGill throughout the academic session, and to be candidates for a higher degree at McGill. A little teaching

work may be required. Apply to the Dean of the Faculty of Graduate Studies and Research, through the Department of Economics, before February 1.

Mary Keenan Scholarship in English

Value $200, awarded by the Department of English to a student proceeding at McGill from the B.A. to the M.A. in English. The need and ability of the student are considered.

Samuel Lapitsky Scholarship

Value tuition fees. To be awarded on the recommendation of the Departments of Sociology or Anthrolopology (each in alternate years). Apply to the Dean of the Faculty of Graduate Studies and Research through the Departments of Sociology and Anthropology before February 1.

Seagram Business Fellowship

See alphabetical listing under Management (section 5.8).

Alexander Mackenzie Fellowship in Political Science

Value $2,000, plus tuition fees. Tenable by a graduate of any accredited university, conditional upon his acceptance by the Faculty of Graduate Studies and Research in the field of Political Science. A certain amount of tutorial and teaching work is required. Under certain conditions, after consultation with the Department of Political Science, this fellowship may be held for a second or third year. Each candidate should send (i) a letter of application, (ii) a certified copy of his academic record, (iii) not more than three testimonials, to the Department of Political Science before February 1.

Sir Vincent Meredith Fellowship in Agricultural Economics

Value $2,500 per year, tenable for a two-year period. Candidates must qualify for graduate work in Economics at the Ph.D. level and must pursue research or thesis work on an approved subject in the area of Agricultural Economics. Limited teaching or other duties are required. Apply to the Department of Agricultural Economics, Macdonald College, Quebec, H0A 1C0, before February 1.

Newcomen Award

The Newcomen Society in North America offers a prize of $200 known as the Newcomen Award for a student at McGill who writes an outstanding paper on some facet of Industrial History. Entries must be submitted to the Chairman of the Department of Economics on or before April 1.

Arthur C. Tagge Fellowship in the Humanities and Social Sciences

Value $3,500, plus tuition fees. Tenable by a graduate of any approved university proceeding to a higher degree in any Department of the Humanities or the Social Sciences. Normally awarded for the first year of graduate study and not renewable, but exceptions may be made. Outstanding students in the last year of the undergraduate course, at McGill or elsewhere, should apply to the Fellowships Office, Dawson Hall, before February 1.

Prize of the Ambassador of Yugoslavia in Canada

A book prize for the best student in the language, literature or civilization of one of the peoples of Yugoslavia (principally Serbo-Croatian). Open to undergraduate or graduate students and awarded on the recommendation of the Department of Russian and Slavic Studies.

5.6 Law

Edwin Botsford Busteed Scholarship

Value approximately $750 and can be used to supplement funds for graduate studies already received from other sources. Bequeathed by the late Mrs. Edwin Botsford Busteed in memory of her husband, Edwin Botsford Busteed, K.C., B.A., B.C.L. Awarded by the Faculty of Law to an applicant, for graduate research on some subject connected with the law of Quebec and approved by the Faculty.

Institute of Air and Space Law Scholarships and Fellowships

These may be available at a value of $1,750 to $2,500. Candidates must hold a law degree of high standing from an approved law school or must have equivalent professional standing. Apply to the Institute of Air and Space Law for further information before February 1.

Thomas Alexander Rowat Scholarship

Value $250, founded by Mr. Donald McKenzie Rowat, N.P., in memory of his brother, Lieutenant Thomas Alexander Rowat, B.C.L., who was killed in action at Lens, France, on June 28, 1917. Awarded for proficiency in French and in the old French law, conditions set by the Faculty.

5.7 Library Science

Apply to the Director of the School for the following scholarships before March 1:

Janet Agnew Scholarship in the Graduate School of Library Science

Value: $250.00 Established from a bequest of the late Janet M. Agnew, a graduate of and former instructor in the School. Awarded on the recommendation of the Director of the Graduate School of Library Science.

Ethelwyn M. Crossley Scholarships

Value $200, founded in honour of a former student of the Library School. Women students are given preference.

Elizabeth G. Hall Scholarships

Value $200, founded in memory of a former member of the McGill University Library Staff.

Library Science Fellowship

Value $2500. Established by the McGill Development Fund in co-operation with the Library staff to assist a member of the Library staff to attend the first academic year of the M.L.S. program in the Graduate School of Library Science. Open to a full-time member of the library staff; tenable for one academic year. Applications should be made to the Director of the Graduate School of Library Science by March 1.

Dr. G.R. Lomer Scholarships

Two scholarships of $640 each.

Dr. Virginia Murray Prize

Awarded to the student in the First year of the Master of Library Science program who obtains the highest grade in the Organization of Materials course.

5.8 Management

Bronfman Fellowships in Commerce and Economics

The Faculty of Graduate Studies and Research offers two fellowships of $2,000 each plus tuition fees to men and women, preferably with research experience, who are graduates in Commerce or Economics from accredited universities. The holders are entitled to apply again in a subsequent year, will be expected to be in residence at McGill throughout the academic session, and to be candidates for a higher degree at McGill. A little teaching work may be required. Apply to the Dean of the Faculty of Graduate Studies and Research, through the Department of Economics, before February 1.

H.E. Herschorn Graduate Scholarship

Established in 1965, covering the amount of the current tuition fees and tenable by a student entering either the First or the Second year of the M.B.A. program. Apply to the Admissions Officer, Faculty of Management.

M.B.A. Fellowships

Ten awards of $2500 each per year, renewable if satisfactory standing is maintained. Established by the McGill Development Fund. Awarded to entering students on the basis of academic merit upon the recommendation of the Faculty of Management Scholarships Committee.

McGill Associates Graduate Fellowships in Management

Established by the McGill Associates, a group of Montreal business and professional men interested in the University, to ensure that the graduate degree program of the McGill Faculty of Management continues to attract students of a high academic and professional calibre. A number of fellowships are available, each with an annual value of up to $3,600 for students at the Master's level. This amount may be increased in the case of students proceeding to a doctoral degree. These fellowships are open to students registered in any postgraduate degree program of the Faculty of Management. Apply to the Admissions Officer, Faculty of Management.

Rodgie McLagan Fellowships in Management

Two fellowships of $1,500 each have been established by Canada Steamship Lines for graduate study in management. Application forms must be completed and returned to the Admissions Officer, Faculty of Management, by August 1st.

Quebec Government M.B.A. Scholarships (Jeunes Administrateurs)

75 scholarships are available, valued at up to $6,000 for single students and up to $8,000 for married students, tenable for a period of 12 months. Applicants must hold a first university degree with two years of full-time experience in Quebec in some executive capacity in a small or medium-sized business. Apply to the Fellowships Office, Faculty of Graduate Studies and Research, Dawson Hall, McGill University, P.O. Box 6070, Montreal, Quebec H3C 3G1. Completed application forms must be returned to the Fellowships Office by January 17th at the latest.

N.B. Students unable to comply with the above deadline may submit the completed application directly to the Quebec Government by January 31st at the very latest.

Seagram Business Fellowships of the Samuel Bronfman Foundation

Eight Type A awards of $1,000 are given annually by this Foundation to first or qualifying year students enrolled in a Master's degree program. Eligibility is limited to Canadian citizens. Applicants for first year fellowships may apply directly to: Professor Jean-Paul Sallenave, Awards Chairman, Canadian Association of Administrative Sciences, Faculty of Administration, Sherbrooke University, Sherbrooke, Quebec. Completed applications must be received before May 18.

Four Type B fellowships of $1,600 are given annually by this Foundation to students in their final year of a Master's program or in any year of a Doctoral Program. Eligibility is limited to Canadian citizens. Applications are submitted on behalf of candidates by the Dean of the Faculty of Management and interested students should contact him before April 12.

Society of Industrial Accountants of Canada Business Fellowships

Five fellowships of $1,200 each are available annually to students enrolled in a graduate business program at Canadian universities. Awards are to be granted to students whose program indicates an interest in Management Accounting and Accounting Research. Apply before April 1 to: Administrative Secretary, Fellowships Selection Committee, Society of Industrial Accountants of Canada, P.O. Box 176, 154 Main Street East, Hamilton, Ont..

Xerox of Canada Limited Fellowship in Management

Value $2,000, established as a centennial project by Xerox of Canada Limited to encourage management studies at the graduate level. Open to students in the M.B.A. program and awarded by the Scholarships Committee of the Faculty of Management. Apply to the Admissions Officer, Faculty of Management.

5.9 *Medicine and the Medical Sciences*

Sir Edward W. Beatty Memorial Scholarships for Medical Students

Two scholarships, not necessarily of equal value, awarded annually to students of any nationality. Open to (i) students registered in the McGill Faculty of Medicine as candidates for the M.D., C.M. degree, (ii) graduates of an accredited Faculty of Medicine registered for postgraduate degrees, (iii) graduates of an accredited Faculty of Medicine registered for a postgraduate diploma in a clinical specialty, (iv) graduates of an accredited Faculty of Medicine who are employed in a year of research as part of their residency training program. For students who hold or are working towards the McGill M.D., C.M. the award may be held at any approved institution in Canada or abroad. For other qualified students the award must be held at McGill. The holder is expected to devote his year of tenure either to research or to some form of special training excluding the normal training towards the M.D., C.M. and excluding any of the years of residency training required in the Diploma courses. Awarded by the Faculty of Medicine but not unless suitable candidates present themselves. Apply to the Associate Dean, Graduate Studies and Research, Faculty of Medicine, on the forms provided for this purpose on or before February 1 of the year in which the scholarship is to commence.

Irma H. Bauer Research Fund

The income from a bequest by the late Irma H. Bauer to be used for the support of a student doing research in the field of epilepsy.

A.A. Browne Memorial Fund

This fund of $10,000 is used either for a fellowship to be known as the "A.A. Browne Memorial Fellowship", or for a grant to a department to provide technical assistance, equipment, and supplies for medical research. The fellowship is open to graduates of any recognized medical school and is for the advancement of medical science, especially in Obstetrics and Gynaecology. Apply to the Associate Dean, Graduate Studies and Research, Faculty of Medicine.

J.B. Collip Fellowships in Medical Research

Up to three fellowships of $3,000 each are awarded for study at McGill in Anatomy, Bacteriology, Biochemistry, Histology, Pathology, Pharmacology, or Physiology. Candidates must hold the M.Sc. or Ph.D. in one of these subjects, or a degree in medicine, from a recognized university. Graduates of the McGill medical faculty may be permitted to hold the fellowship at an approved institution elsewhere. Apply before February 1 to the Associate Dean, Graduate Studies and Research, Faculty of Medicine, from whom application forms and further particulars may be obtained.

James Cooper Endowment for the Study and Teaching of Internal Medicine

The income from a bequest by the late James Cooper is used for fellowships or for grants to departments to provide technical assistance, equipment, and supplies for medical research.

James Douglas Fellowship in Pathology

The income from a donation of $25,000 by the late Dr. James Douglas, is devoted to co-ordinated research in the laboratories of pathology in or associated with the University.

Richard Collier FitzGerald Fund

The income from a bequest by the late Mr. Frederick D. FitzGerald is used for fellowships or for grants to departments to provide technical assistance, equipment and supplies for medical research, especially on the subject of cancer.

Percy Hermant Fellowships in Ophthalmology

These fellowships of $2,000 each have been established by Mr. Percy Hermant. Normally two are awarded each year. Candidates must be graduates in Medicine of McGill or other approved medical schools, must be commencing the study of Ophthalmology at McGill and must be planning to practise this specialty in Canada. Apply to the Chairman, Department of Ophthalmology, McGill University.

Blanche Hutchinson Research Fund

The income from a bequest from the late Mrs. Frank L. Hutchinson is used for fellowships, or for grants to departments to provide technical assistance, equipment, and supplies for medical research.

Isaak Walton Killam Scholarships

Established in 1966 by a generous bequest to the Montreal Neurological Institute by the will of the late Mrs. Dorothy Killam, for advanced study in the fields of Neurology, Neurosurgery and the related basic disciplines. Open to all, but preference given to Canadians and scientists planning to immigrate to Canada. Value $4,000 — $8,000 depending on the candidate's qualifications. Apply in writing to the Director of the Montreal Neurological Institute by March 1.

Samuel Lupovich Memorial Scholarship

Of the approximate value of $400, open to graduates of any approved medical school who are principally engaged in research upon the physiology of the blood, or its diseases. Apply to the Associate Dean, Graduate Studies and Research, Faculty of Medicine, by February 1.

Joseph McAbbie Scholarship.

$1,000, established by a bequest from the late Joseph McAbbie for research on asthma and asthmatic bronchitis. Apply to the Associate Dean, Graduate Studies and Research, Faculty of Medicine, by February 1.

John McCrae Fellowship

Approximate value of $1,800 for (1) graduates of any approved medical school who are candidates for the Diploma in Surgery, Urology, Otolaryngology, Radiology, etc., or (2) McGill graduates in Medicine, or (3) graduates of any approved medical school proceeding towards a McGill M.Sc. or Ph.D. in fields related to Surgery, etc. In all cases, the holder is expected to spend twleve months in full-time laboratory or clinical research at McGill or an approved institution elsewhere. Apply to the Dean of the Faculty of Medicine not later than April 1, with a letter of recommendation from a member of the teaching staff, transcript of the undergraduate record, and description of the proposed research naming the institution selected and its director. Tenure should commence not earlier than June nor later than October; a final report on the work done is required. In all cases preference is given to candidates aiming at a course in Surgery and to researches likely to contribute to Surgery and its branches.

H.W. Molson Fellowship in Cancer Research

Value not less than $1,000, renewable for not more than four years, and open to graduates of any recognized medical school. The course of training and research will be decided by the Strathcona Professor of Pathology and the Professor of Obstetrics and Gynecology, and will ordinary comprise one or more years of study in the Pathological Institute followed by clinical research in the Royal Victoria Hospital. Apply to the Dean of the Faculty of Medicine.

Fellowships in Neurology, Neuropathology, and Neurosurgery

A limited number of fellowships may be available in the Montreal Neurological Institute, to which inquiries should be directed.

Osler Memorial Scholarship

Awarded by the Canadian Medical Association as funds permit to a candidate nominated by the Faculty of Medicine "in order that such a candidate may pursue studies to advance the knowledge of medicine and to improve the teaching of clinical medicine." Candidates must be graduates of not more than ten years' standing and, other things being equal, preference is given to McGill graduates.

Gordon Phillips Fund for Research in Cardiovascular Diseases

This fund provides a scholarship of not less than $1,600, open to graduates in Medicine of any approved medical school regardless of sex, race or religion. Awards to McGill graduates in Medicine may be held at McGill or at any other approved institution. Awards made to other graduates in Medicine must be held at McGill University. Apply to the Associate Dean, Graduate Studies and Research, Faculty of Medicine, by February 1.

Joseph Schubert Memorial Scholarship.

Approximate value $450 for graduates of any approved medical school who are principally engaged in study of the physiology of the heart, or its diseases.

Apply to the Associate Dean, Graduate Studies and Research, Faculty of Medicine, by February 2.

Corrine Fay Tabac Memorial Award in Medicine

Established by the family and friends of the late Corinne Fay Tabac, in her memory, for the support of established investigators doing research closely allied to the study of Hodgkins Disease. Awarded annually by the Postgraduate Awards Committee of the Faculty of Medicine.

Jeannette and Abram Victor Memorial Scholarship

Of the approximate value of $550, open to graduates of any approved medical school and who are principally engaged in research upon the physiology of the heart, or its diseases. The scholar may hold another award or position. Apply to the Associate Dean, Graduate Studies and Research, Faculty of Medicine, by February 1.

Hiram N. Vineberg Research Fund

The income from a bequest by the late Dr. Hiram N. Vineberg to be used for fellowships or for grants to departments to provide technical assistance, equipment and supplies for medical research.

Harrison Watson Scholarship

Established in 1953 by a bequest from the late Harrison Watson and Ruth Appleton Watson in memory of their only son, Captain Aubrey Wentworth Harrison Watson, D.S.O., M.C. Value not less than $1,500, open to men and women graduates of an approved Faculty of Medicine or holders of M.Sc. or Ph.D. degrees or approved candidates for Ph.D. degrees at McGill who have completed one year of research and study towards their degree and also to candidates who have spent at least one year in postgraduate training. Awards of higher value may be made to candidates with higher qualifications. Renewable for two additional years. Preference is given to McGill graduates. The purpose of the scholarship is the encouragement of research into the causes and cure of tuberculosis and other diseases of an allied character. Tenable only at McGill unless the scholar is a graduate in Medicine of McGill in which case it is also tenable at an approved institution elsewhere. The holder must devote his full time for at least ten consecutive months to the object of the award. Application forms obtained from the Associate Dean, Graduate Studies and Research, Faculty of Medicine, must be submitted before February 1.

5.10 Music

Julius Schloss Memorial Award

Approximate value: $400 per annum. Awarded primarily on the basis of merit to a graduate student in Music by the Faculty of Graduate Studies and Research on the recommendation of the Graduate Committee of the Faculty of Music.

5.11 Natural Sciences and Engineering

Awards tenable in more than one department or faculty

D.W. Ambridge Award

An award to the graduand receiving the degree of Ph.D. in the Physical Sciences or Engineering Departments who is judged by the Executive Committee of the Graduate Faculty to be most deserving of the award.

Gottesman Scholarship

The D.S. and R.H. Gottesman Foundation offers $3,000 per year (supplemented by at least $1,500 per year), for research in any field of science or engineering on a topic of interest to the pulp and paper industry, to an American, a Canadian, or a citizen of the British Commonwealth, who is a graduate of a recognized university. He is expected to register at McGill as a candidate for a higher degree. Awarded by the Education Committee of the Pulp and Paper Research Institute. Apply to the Chairman of that Committee by May 1.

William Henry Howard Scholarships

Three scholarships of $1,000 each bequeathed in 1955 by the late Mrs. Florence P. Howard in memory of her husband. Open to undergraduate and graduate students in Metallurgy, Chemical Engineering and Geological Sciences. Awarded and renewable by the Graduate Faculty Scholarships Committee upon the recommendations of the Departments concerned for scholastic ability and general promise.

International Nickel Company of Canada Fellowships

Awards up to $4,800 (plus $700 for research expenses), renewable up to three years, are available in the fields of Metallurgy, Mining, Geology, and the Chemistry and Physics of Metals. Applications are made by the professor directing the research, and should reach the Dean of the Faculty of Graduate Studies and Research by January 1.

Dr. W. B. Lewis Prize

A prize of $300 is offered annually in a competition for an essay, written with a view to publication to produce an informative review of some topic involving more than a single scientific discipline and having relevance to a subject of potentially general concern, e.g. water pollution, growing amount of carbon dioxide in the atmosphere, problem of mercury in the environment, etc. The prize is awarded by the University Scholarships Committee and must reach the Secretary, University Scholarships Committee, Scholarships Office, F. Cyril James Building, on or before March 3 of each year.

Otto Maass Memorial Fellowship

Value $4,300 per annum for graduate students in Chemistry, Chemical Engineering or Mechanical Engineering at McGill who are conducting their thesis research in the Pulp and Paper Research Institute of Canada. The fellowship is renewable and may be supplemented by nominal amounts of demonstrating in the University. Apply to the Chairman, Education Committee, Pulp and Paper Research Institute of Canada before February 1.

Alexander McFee Fellowship

Value $3,500, open to graduates of any approved university who are resident full-time candidates for higher degrees or diplomas at McGill. The award will be made on a rotational basis in Physics, Chemistry, and Medical Sciences (with preference for Cancer research).

Frank L. Mitchell Fellowship

Value $4,300 per annum for graduate students in Chemistry, Chemical Engineering or Mechanical Engineering at McGill who are conducting their thesis research in the Pulp and Paper Research Institute of Canada. The fellowship is renewable and

may be supplemented by nominal amounts of demonstrating in the University. Apply to the Chairman, Education Committee, Pulp and Paper Research Institute of Canada, before February 1.

Noranda Graduate Research Fellowships

Awards of $5,500 (plus $1,000 for equipment and other expenses), renewable up to three years, and open in the fields of Mining, Mineral Engineering, Extractive Metallurgy, Chemical Engineering, Electrochemistry, Inorganic Chemistry, Physical Metallurgy, and Materials Science. Application should be made through the appropriate University department to the Director of Research and Development, Noranda Research Centre, 240 Hymus Boulevard, Pointe Claire, Quebec, not later than April 1. Recipients of Fellowships will be notified by May 1. Preference will be given to Canadian citizens.

John Bonsall Porter Scholarship

Value $1,000, founded by Dr. W. W. Colpitts (B.Sc., 1899). Open to graduate students proceeding to the degree of M.Eng. in Civil, Mechanical, or Electrical Engineering, preferably in Civil Engineering. Apply to the Dean of the Faculty of Engineering not later than July 30. Applications from graduates of other universities must be accompanied by certified statements of academic standing and letters of recommendation.

Pulp and Paper Research Institute of Canada Graduate Studentships

At least two studentships, value at least $4,500 per annum, for graduate students in Chemistry, Chemical Engineering or Mechanical Engineering at McGill who are conducting their thesis research in the Pulp and Paper Research Institute of Canada. Renewable and may be supplemented by nominal amounts of demonstrating in the University. Apply to the Chairman, Education Committee, Pulp and Paper Research Institute of Canada, before February 1.

Clifford B. Purves Fellowship

Value $4,300 per annum, for graduate students in Chemistry, Chemical Engineering or Mechanical Engineering at McGill who are conducting their thesis research in the Pulp and Paper Research Institute of Canada. The fellowship is renewable and may be supplemented by nominal amounts of demonstrating in the University. Apply to the Chairman, Education Committee, Pulp and Paper Research Institute of Canada, before February 1.

Carl Reinhardt Scholarships and Bursaries in Physics and Geological Sciences

Established from the estate of the late Carl Reinhardt. To be used for scholarships or bursaries for undergraduate students in the Departments of Physics and Geological Sciences, and for scholarships or bursaries or in the support of their research for graduate students. Awards are made by Fellowships Office, Faculty of Graduate Studies and Research, on the recommendations of the Chairmen of the Departments concerned.

David Stewart Memorial Fellowship

See alphabetical listing under *Agriculture and the Biological Sciences.* (section 5.2.)

5.11.2 CHEMISTRY

T. Sterry Hunt Awards in Chemistry

Four $200 awards for best demonstrating. Awarded by the Department of Chemistry. No application necessary.

Kimberly-Clark of Canada Fellowship

Value $3,000 (supplemented by $500 per year), open to graduate students in the Department of Chemistry who are conducting thesis research in the Physical Chemistry Division of the Pulp and Paper Research Institute of Canada. Apply to the Dean of the Graduate Faculty through the Department of Chemistry before February 1.

Coll McFee Memorial Scholarship.

See alphabetical listing under *Education* (section 5.4).

Richard T. Mohan Scholarship

Established in 1971 to honour the memory of the late Richard T. Mohan. To be awarded to a postgraduate student in the Department of Chemistry proceeding to the Ph.D. degree. Applications to the Chairman, Dept. of Chemistry, before June 1.

Carl A. Winkler Award in Chemistry

Made possible by the donations of his graduate students, colleagues, friends, and a matching gift by Polysar Limited. The award of about $600 is given annually to the Ph.D. candidate who upon graduating is judged to be of outstanding academic excellence. Awarded by the Chemistry Department. No applications necessary.

Xerox Fellowship

A fellowship of $4,500, established by Xerox Corporation for graduate research in Polymer Physical Chemistry and not normally renewable. Apply to the Dean of the Faculty of Graduate Studies and Research before February 1 through the Department of Chemistry.

5.11.3 CIVIL ENGINEERING

Franki Fellowship in Soil Mechanics

Value $5,000, for research expenses; renewable once. Open to graduates of recognized Canadian universities in Agriculture, Engineering or Science. Awarded by Franki Canada Limited for the support of graduate studies in Soil Mechanics. Application should be made to Franki Canada Ltd. through the

Chairman of the Department of Civil Engineering before April 1.

Miron Fellowship in Concrete Studies

Established by Miron Company Limited for advanced studies in some phase of the concrete industry in the Department of Civil Engineering. Value $900, plus an additional $300 to the University to be used in the best interests of the investigation. Applicants must be Canadian citizens, normally resident in Canada or those who have taken steps to become Canadian citizens, and graduates in science or engineering of a recognized university. Apply to the Dean of the Graduate Faculty through the Department of Civil Engineering before February 1.

5.11.4 COMPUTER SCIENCE

International Business Machines Fellowships

A stipend of up to $4,000 per year to support graduate research and study in Computer Science. Renewable. Apply to the Director of the School of Computer Science before April 1.

5.11.5 GEOLOGICAL SCIENCES

LeRoy Memorial Fellowship in Geological Sciences

Value $1,500, established by friends of Captain O.E. LeRoy (Arts, 1895), who was killed at Passchendaele, in October 1917. May be awarded annually to a student who desires to proceed with postgraduate studies in Geology at McGill. The recipient may be asked to assist in teaching in the Department. Awarded by the Graduate Faculty Fellowships Committee on the recommendation of the Chairman of the Department of Geological Sciences.

J. B. Lynch Fellowship in Geological Sciences

$3,000 for an outstanding student commencing or continuing postgraduate studies in Geological Sciences. Apply to the Dean of the Faculty of Graduate Studies and Research through the Department of Geological Sciences before February 1.

5.11.6 MINING AND METALLURGICAL ENGINEERING

Alcan Fellowship

Value $4,000 plus a grant to the Department for research expenses. Open to graduates of any university admitted to McGill as resident candidates for a Master's or Doctor's degree in Metallurgy and related subjects, and is renewable. Apply to the Dean of the Graduate Faculty through the Department of Mining and Metallurgical Engineering before February 1.

Sir William Dawson Fellowship in Metallurgy

A research and teaching graduate award of $3,000, or one or more undergraduate awards totalling $3,000, in the Department of Mining and Metallurgical Engineering, endowed in memory of the late Sir William Dawson, Principal of McGill University from 1855 to 1893.

James Douglas Fellowship in Mining Engineering

A research and teaching fellowship of $3,000 in the Department of Mining and Metallurgical Engineering endowed by the late Dr. James Douglas and open to qualified university graduates.

B.J. Harrington Bursary in Mining Engineering

Value $1,000, supported by graduates in Mining Engineering in memory of the late Professor B.J. Harrington, awarded annually if a suitable candidate applies, and open to qualified university graduates.

Quebec Iron and Titanium Corporation Fellowship in Metallurgy

Value $2,000 plus fees, plus a grant to the Department for research expenses. Open to graduates of any university admitted to McGill as candidates for a Master's or Doctor's degree in Metallurgy and related subjects, and is renewable. Apply to the Dean of the Graduate Faculty through the Department of Mining and Metallurgical Engineering before February 1.

Horace G. Young Fellowships

Awarded to graduates of McGill University who are conducting advanced research in the Department of Mining and Metallurgical Engineering. Two awards of $1,500 each are made annually. Awarded by the Faculty of Graduate Studies and Research on the recommendation of the Chairmen of the Department of Mining and Metallurgical Engineering, to whom applications should be made before February 1.

5.12 Nursing

Alumnae Association, Montreal General Hospital School of Nursing Bursaries

Bursaries are available for graduates of the Montreal General Hospital School of Nursing. For further information apply to Miss M. MacLeod, Treasurer, Livingston Hall, 1650 Cedar Avenue, Montreal, Quebec H3G 1A4.

Alumnae Association, Royal Victoria Hospital School of Nursing Bursary

Bursary of $1,000, open to graduates of the Royal Victoria Hospital School of Nursing, accepted in an approved University program. Apply before March 31 to Alumnae Office, Nurses' Home, Royal Victoria Hospital, 687 Pine Ave. W., Montreal, Quebec, H3A 1A1.

Alumnae Association of the School of Nursing Scholarship

In memory of Dr. Marion Lindeburgh, the Alumnae Association has established a scholarship of $700 open to graduate, registered nurses who wish to study at the School of Nursing, and who meet the entrance requirements. Scholarships are also available for students in B.Sc.(N) and M.Sc(Appl.) programs. Applications should be submitted by June 1 to the Chairman of the Scholarship Committee, Alumnae Association, School of Nursing, 3506 University Street, Montreal, Quebec H3A 2A7.

Montreal General Hospital

The Montreal General Hospital has a limited number of bursaries available for nurses studying in the Master's program. For further information apply to the Director of Nursing, Montreal General Hospital, 1650 Cedar Avenue, Montreal, Quebec, H3G 1A4.

Order of Nurses of Quebec Bursaries

A limited number of bursaries are awarded each year for study leading to the Master's degree. The amount of each bursary is $3,000. Applications should be submitted by May 15 to The Order of Nurses of Quebec, 4200 Dorchester Blvd. West, Montreal, Quebec, H3Z 1V4.

Royal Victoria Hospital Nursing Scholarships

The Women's Auxiliary offers scholarships for senior staff members for postgraduate study. Applications should be submitted by March 1 to The Director of Nursing, Royal Victoria Hospital, 687 Pine Avenue West, Montreal, Quebec H3A 1A1.

St. John Ambulance (Order of St. John) of Canada Bursaries

One or more bursaries of $1,000 from the Margaret MacLaren Memorial Fund for study at the Master's level are available to experienced registered nurses who have proven their ability and are preparing themselves for leadership positions. All factors being equal, special consideration will be given to those with St. John (Order of St. John) affiliation. Applications are to be forwarded not later than May 1 to the Chairman of Bursary Funds, St. John Ambulance, National Headquarters, 321 Chapel Street, Ottawa, Ont. K1N 7Z2.

Nursing students are eligible for the federal and provincial loans and bursaries described in *Loans and Bursaries: Federal and Provincial Funds.* (section 8.1) and some *McGill Loans* (section 8.2).

5.13 Religious Studies

Samuel Finley Memorial Bursary

Usually $150, available to a student enrolled in the Faculty of Graduate Studies and Research who is pursuing advanced studies in religion or theology, awarded at the discretion of the Dean of Religious Studies.

Houston Bursary

Value $400, for students studying for the ministry of the Presbyterian Church in Canada, or the United Church of Canada, with preference given to candidates whose mother tongue is French. Awarded on the recommendation of the Faculty of Religious Studies. No application necessary.

5.14 Social Work

School of Social Work Prize

The Alumni Committee of the School of Social Work has established an annual prize to be awarded to the student with the highest standing in the Master of Social Work Program. The present value of the award is $50.

6 POSTDOCTORAL FELLOWSHIPS

Students of Medicine and the Medical Sciences should also read the alphabetical listings under *Medicine and the Medical Sciences* (section 5.9). Several programs listed there provide awards for both students studying towards a doctoral degree and for postdoctoral students.

France-Quebec Exchange Program Postdoctoral Fellowships

Scholarships (2,500 to 3,000F a month) are offered to Quebec postdoctoral students who wish to pursue their studies and research in France for a period of three to twelve months. Candidates from all disciplines are invited to apply, but preference is given to candidates in the fields of pure and applied science. Travelling expenses to and from France as well as expenses incurred while travelling in France for the purpose of research are assumed by the Quebec Government. Applications are considered four times a year: March 1, June 1, September 1 and December 1. Application forms can be obtained from the Fellowships Office of the Faculty of Graduate Studies and Research.

Harold Hibbert Memorial Fellowship

Approximately $6,500 plus travel assistance, tax free, open to candidates who hold a Ph.D. in Chemistry or its equivalent from an approved university. Tenable for one calendar year in the Department of Chemistry at McGill, where the holder must devote full time to research. Not renewable. Apply in writing to the Chairman of the Department of Chemistry by February 1.

C.D. Howe Memorial Fellowship

Open to Canadian citizens or those normally resident in Canada. Tenable anywhere. Value $5,000 for a single man or $7,000 for a married man, plus travel expenses if applicable. Restricted to persons whose proposed program of research is related to the political, administrative, economic, social or intellectual history of Canada since 1930, and is in some way relevant to an understanding of the public career of the Rt. Honourable C. D. Howe. Apply to Director of Awards, Association of Universities and Colleges of Canada, 151 Slater St., Ottawa, Ont. K1P 5N1. Completed application forms must reach the Director before November 30.

National Research Council Postdoctoral Overseas Fellowships.

Value $10,200 plus travel for twelve months, available to applicants who have recently completed or expect to complete the requirements for a Doctorate in Science. Open to Canadian citizens normally resident in Canada. Completed applications must reach the Council by January 15. Applications are available in the Fellowships Office of the Faculty of Graduate Studies and Research.

Nuffield Foundation Travel Grants

Awarded in the Natural Sciences, Medical Sciences, Humanities and Social Sciences. Preference will be given to Canadian citizens, although applicants who have resided in Canada a minimum of four years will also be considered. Candidates must be over 35 years of age, hold a doctor's degree and have had subsequent teaching experience. Return economy air fare for grantee and for wife provided she accompanies him for not less than two months, plus £75 per month to assist with living expenses while in United Kingdom (£100 per month if wife accompanies husband). Application forms, obtained from the Director of Awards, Association of Universities and Colleges of Canada, 151 Slater St., Ottawa, Ont. K1P 5N1 should be submitted by January 1 at latest.

Otto Maass Postdoctoral Fellowship

Approximately $6,500 plus travel assistance, tax free, open to candidates who hold a Ph.D. degree in chemistry or physics or equivalent from an approved university. Tenable for one calendar year and renewable for a second in the Physical Chemistry Division of the Pulp and Paper Research Institute of Canada and the Department of Chemistry, where the holder must devote full time to research. Apply to the Chairman, Education Committee, Pulp and Paper Research Institute of Canada.

7 EXCHANGE AND TRAVELLING FELLOWSHIPS

Canadian Federation of University Women — Margaret McWilliams Travelling Fellowship

Value $3,500, open to any woman scholar who holds a Master's Degree or equivalent from a Canadian University, who is already well advanced on her Doctoral Program, and who wishes to continue her work outside of Canada. The candidate must be a resident of Canada but she may be studying elsewhere at the time of application. Apply to the Chairman of the Fellowships Committee, c/o Canadian Federation of University Women, Mount Allison University, Box 69, Sackville, N.B. Applications and testimonials must be received before February 1.

Commonwealth Scholarship and Fellowship Plan

Provides opportunities for Commonwealth students to pursue advanced courses in other Commonwealth countries. Intended for men and women of high intellectual promise who may be expected to make a significant contribution to their own countries on their return from study abroad. At present, graduate scholarships are available for study in the United Kingdom, Australia, New Zealand, Hong Kong, Malaysia, Malta, India, Ceylon, Jamaica and Sierra Leone, and the Canadian Government offers scholarships for other Commonwealth students to study in Canada. Awards are normally made for two academic years and cover return transportation, tuition fees, personal maintenance allowance, and a grant for incidental expenses. Deadline dates for receipt of applications vary according to each country, but all deadlines are in the Fall. Full information and application forms may be obtained from the Association of Universities and Colleges of Canada, 151 Slater St., Ottawa, Ont. K1P 5N1.

Guy Drummond Scholarship in Political Science and Economics

Originally endowed by the late Guy M. Drummond, awarded to a graduating student in the Faculty of Arts nominated jointly by the Departments of Economics, Political Science and the Department of French Language and Literature, taking into account the student's academic record and the likelihood that he will make a contribution of value to Canadian life. The nominee must be taking the honours course in Political Science or joint honours in Economics and Political Science. The award is made by the Faculty of Graduate Studies and Research on the recommendation of departments and cannot be applied for by the candidate. The value is $5,700 plus tuition fees at McGill and such tuition fees in Paris as may be approved by the Faculty of Graduate Studies and Research. $3,500 of this covers a year of study in Paris plus approved

tuition fees in Paris and registration fees at McGill, and the remaining $2,200 plus tuition fees a further year at McGill studying for the M.A. degree. In Paris, the holder studies at the Institut d'Etudes Politiques unless he wishes to specialize in Economics rather than Political Science and is permitted by McGill to study at the Sorbonne or at the Institut d'Economie Appliquée.

France-Canada Cultural Agreement Graduate Scholarships.

These scholarships are offered by the Government of France, are unrestricted as to field of study and are tenable in France. Value 500 French francs per month (possibly up to 750 French francs per month for Ph.D. candidates), plus return economy air fare and refund for medical, dental, hospital and pharmaceutical expenses and various indemnities towards lodging, relevant travel expenses, thesis typing expenses, free tuition and the benefit of students' privileges (university restaurants, residences, cultural and social activities.). No funds are available for dependents. Open to Canadian citizens or to those who have held landed immigrant status for at least one year prior to submitting application. A good knowledge of French is essential. For further information apply to: Director of Awards, Association of Universities and Colleges of Canada, 151 Slater Street, Ottawa, Ont. K1P 5N1. Closing date for receipt of applications is December 31.

France-Quebec Exchange Program

Scholarships offered to Quebec Graduate Students:

The French Government offers scholarships to Quebec graduate students who wish to study in France. Preference is given to students specializing in the following areas: pure and applied science, economics, town planning, the teaching of French, and the social sciences, although candidates from other disciplines may also apply. The amount of the scholarship is 1,500F (approximately $300) a month and is offered for a nine-month period. The scholarship is renewable upon request. Travelling expenses are also covered.

Information and application forms are available at the Fellowships Office. Application forms must be returned by January 15.

Placement of Graduate Students in French Research Centres:

The purpose of this project is to send Quebec graduate students to France for four to ten months as research assistants in order to familiarize them with French laboratories and research centres. Students should be registered in a Quebec university and pursuing a Ph.D. or master's program.

Application forms and further information are available from the Fellowships Office of the Faculty of Graduate Studies and Research. The deadline for submitting an application is January 15.

German Academic Exchange Service Fellowships.

Sixteen fellowships valued at approximately $137 to $200 per month and return travel expenses, as well as free tuition, course fees and university examination fees. Tenable at universities, technical universities, scientific institutions, and academies of art or music in the Federal Republic of West Germany for study in any field except pharmacy and medicine. Candidates must be Canadian citizens, must be university graduates, must have a good knowledge of German, and must not be more than 32 years of age. Applications are available in the Fellowships Office and must be submitted by early December. For further information, write to: Director of Awards, Association of Universities and Colleges of Canada, 151 Slater Street, Ottawa, Ont. K1P 5N1.

Glasgow Exchange Scholarship

Established to enable a McGill graduate to spend two sessions of postgraduate work at the University of Glasgow and for a graduate of the University of Glasgow to spend two sessions of postgraduate work at McGill. The awards are available for two years and are awarded only every second year. Open to degree and non-degree candidates. Glasgow will waive fees for the student from McGill and provide accommodation in a hall of residence plus a cash award to a total value of about 700 pounds sterling plus fees. The value of the award at McGill for the student from Glasgow is $3,000 per annum. Vacancies in the program arise in odd-numbered years and interested Glasgow students should seek further information from the Clerk of Senate, University of Glasgow, Glasgow, W.2, Scotland.

Macdonald Travelling Scholarship

Value $2,500. Founded by a bequest of the late Sir William MacDonald "for the purpose of enabling English-speaking Law students to take a course of studies in France," the testator "deeming it of great importance that the English-speaking members of the legal profession should be proficient in the French language." The holder is required to pursue a year's study in the Law Faculty of a French university approved by the McGill Faculty of Law. Awarded by the Faculty to a student of the graduating class, proceeding to the Bar, with first or second class honours in the final examination and who would be unable without financial help to spend a year in France. The Faculty interprets the bequest as intending that the scholarship be awarded only to students preparing for practice as advocates in the Province of Quebec. At present the scholarship must be used in the year in which it is awarded.

Mackenzie King Travelling Scholarships

Four or five scholarships of not less than $2,500 each, offered to graduates of any Canadian university who propose to engage, either in the U.S.A. or the United Kingdom, in postgraduate studies in

International or Industrial Relations (including international or industrial aspects of Law, History, Politics, Economics). Applicants should be persons of unusual worth and promise. Awards are based on their academic achievement, personal qualities and demonstrated aptitudes, as well as their proposed programs of study. Applications must be submitted by March 1. Further information may be obtained from the Fellowships Office, Faculty of Graduate Studies and Research.

Frank Knox Fellowships

Awards of $2,400 plus tuition, tenable at Harvard University in Arts, Science, Engineering, Business Administration, Dental Medicine, Design, Divinity, Education, Law, Medicine, Public Administration, and Public Health, by Canadian students, not resident in the U.S.A., graduated or about to graduate from a Canadian university or college at which they have spent at least two of the last four years. Information and application forms are available from the Director of Awards, Association of Universities and Colleges of Canada, 151 Slater St., Ottawa, Ont. K1P 5N1, to whom completed applications must be sent before December 1.

Moyse Travelling Scholarships

Founded by the late Right Honourable Lord Atholstan, to commemorate the "splendid services of Dr. Charles E. Moyse, for forty-two years Professor of English, during sixteen of which he was Dean of the Faculty of Arts and Vice-Principal of the University." Two scholarships, normally of $2,000 each tenable for one year. One scholarship to be awarded by the Faculty of Arts for distinction in literary subjects and the other by the Faculty of Science for distinction in scientific subjects.

In the absence of applicants of sufficient merit in either of the faculties, applicants from final year students in, or graduates of, other faculties of the University may be considered.

If there is no winner in one of these faculties both scholarships may be awarded to applicants in the other faculty. Holders must devote the year of tenure to advanced study, preferably in a British or European university, but not to the exclusion of other institutions approved by the Faculty of Arts or of Science. Applications, whether from graduates or from students in the final year of the undergraduate course, should reach the Dean of the Faculty of Arts or of Science not later than April 1. Applications should be accompanied by: (1) an official transcript of the applicant's academic record to date; (2) the names of two referees who are familiar with the applicant's work; (3) a detailed and comprehensive statement of the applicant's proposed course of study; the institution or centre at which he, or she, proposes to study; (4) a statement of the applicant's age and nationality.

Awards will be made after the results of final examinations in the final year of the undergraduate course have been determined.

Rhodes Scholarships

Approximately £1,550, represented by a personal allowance of approximately £80 per month and direct payment of University and College fees and dues, for two scholars chosen from the Province of Quebec, tenable for two years at Oxford University. A third year may be granted under certain conditions. Candidates must be British subjects with at least five years domicile in Canada and be between the ages of nineteen and twenty-five. Male students in any faculty may apply. Applications must reach the Secretary of the Provincial Selection Committee before October 25. For further details of tenure, eligibility, and qualifications, and application forms apply to the Fellowships Office, Faculty of Graduate Studies and Research, or the Provincial Secretary, Mr. Michel Venant, 115 Dorchester Blvd. W., Suite 3900, Montreal, Que.

Rotary Foundation Fellowship

Approximately $4,000. The Rotary Foundation of Montreal, District 704, offers a Graduate Fellowship for study abroad each year. Requirements for candidates (male or female) are: bachelor's degree or equivalent, age 20 — 28 inclusive, may be married. The award covers round trip transportation, room and board, tuition and miscellaneous related expenses for one academic year. Preference is given to applicants who wish to study in a country where the native language is different from their own. For further information and application forms, write to the Rotary Club of Montreal, Queen Elizabeth Hotel, Suite 373, Montreal, Que. H3B 1X8. Deadline for receiving applications is March 1.

Royal Commission for the Exhibition of 1851 Overseas Science Research Scholarships

Value £900 per annum, plus £100 a year to cover university fees. Tenable for two or exceptionally, three years, to enable students to devote themselves to research work under conditions most likely to equip them for practical service in the scientific life of the Commonwealth. The holder must devote himself to a field of research approved by the Commissioners. Three scholarships, tenable at any institution approved by the Commission (usually universities in the United Kingdom), are allotted to Canada each year, the scholars being chosen by the Commission from nominees of certain universities, including McGill. Candidates will in most cases have completed from one to three years of post-graduate study and must present evidence of accomplishment in research, either published papers or typewritten reports or theses. Candidates should apply, not later than February 15, through the Chairman of their Department. Further details may be obtained from the Fellowships Office, Faculty of Graduate Studies and Research.

Shastri Institute Fellowships

Two types of fellowships *for research in India* are offered in the humanities and social sciences: (1)

Senior Fellowships for established scholars normally resident in Canada (normally for a 12-month period; shorter term grants under this category will also be considered). Value, rupee equivalent of $7,000. (2) Junior Fellowships for qualified graduate students to conduct research as partial fulfilment of the requirements for a doctoral degree in a Canadian institution — value, rupee equivalent of $5,500. Deadline for applications for Junior and Senior Fellowships is November 1. Apply to: The Executive Director, The Shastri Indo-Canadian Institute, 3511 Peel Street, McGill University, Montreal H3A 1W7.

Thomas Shearer Stewart Travelling Fellowship

Value $2,500, established in memory of the late Thomas Shearer Stewart, B.A., 1905, B.C.L. 1908, by his widow and family. Awarded annually by the Dean to a recent graduate of the Faculty of Law for studies in Law at a university in Europe or the United Kingdom approved by the Dean. Preference is given to Canadian citizens intending to reside in Canada. Apply to the Dean of the Faculty of Law.

Swiss University Scholarships

The Swiss Government offers six scholarships a year for study in Switzerland in any field except Music and Fine Arts and will pay approximately $150 to $175 per month, plus return fare at conclusion of each scholarship, plus tuition fees, plus health and accident insurance, and generally, money for some study material. Candidates must be Canadian citizens and must have graduated from a recognized university. A good knowledge of either French or German is required. Awards are for 12 months with the possibility of renewal. Applications must be submitted by December 1st. For further information, write to: Director of Awards, Association of Universities and Colleges of Canada, 151 Slater Street, Ottawa, Ont. K1P 5N1.

8 LOANS AND BURSARIES

8.1 Federal and Provincial Funds

In all cases, a basic qualification is that the applicant must be a Canadian citizen or a landed immigrant with one year's residence and domicile in the province to which he applies.

In all provinces except Quebec, the provincial authority listed below administers the Canada Student Loan Plan (Federal) as well as their own programs. The addresses are as follows:

Quebec: Apply after May 1, at the Student Aid Office, 3465 Peel St., Montreal, Que. H3A 1W7.

Newfoundland

Canada Student Loans Authority	Department of Education, Imperial Oil Building, St. John's, Newfoundland. A1C 5R9

Prince Edward Island

Canada Student Loans Committee	Department of Education, Charlottetown, Prince Edward Island. C1A 7N8

Nova Scotia

Nova Scotia — Canada Student Loans Committee	Student Aid Office P.O. Box 578, Halifax, Nova Scotia. B3J 2Z1

New Brunswick

Department of Youth	Centennial Building, Fredericton, New Brunswick. E3D 5H1

Ontario

Ministry of Colleges and Universities	Student Awards Branch, Mowat Block, Queen's Park, Toronto, Ontario. M7A 1C6

Manitoba

Department of Colleges Universities	Student Aid Branch, Box 6, 1181 Portage Avenue, Winnipeg, Manitoba. R3C 0V8

Saskatchewan

Department of Continuing Education	540 Midtown Centre, Regina, Saskatchewan. S4P 3K2

Alberta

Students Finance Board	Department of Advanced Education, Devonian Building, 11160 Jasper Avenue, Edmonton, Alberta. T5K 0L2

British Columbia

The British Columbia Department of Education	Division of Post-Secondary Education, 535 Yates Street, Victoria, British Columbia. V8W 2Z6

Yukon Territory

The Students Financial Assistance Awards Committee	Superintendent of Education Box 2703, Whitehorse, Yukon Territory. Y1A 2C6

Northwest Territories

Director of Education
for the Northwest
Territories

Government of the
Northwest Territories,
Yellowknife,
Northwest Territories.
X0E 1H0

8.2 McGill Loans

Loans from most of these funds are administered by the Student Aid Office, 3465 Peel Street — Telephone: 392-5256. Application procedures for the other funds are noted below.

Margaret Birks Memorial Loan Fund

Established in memory of the late Mrs. Margaret Birks, this fund is available to graduate students, preferably in the Department of Psychology. Where loans appear justified, but repayment will not be practical, bursaries will be granted.*

Graduate Students' Loan Fund

Established in 1951 by the Board of Governors for students in the Faculty of Graduate Studies and Research.*

Hewitt Memorial Bursary Fund

A bequest from the late Frederick T. O'Reilly-Hewitt in memory of his parents, the late Daniel Frederick Hewitt and the late Maria Stenson Hewitt for bursaries. Open to Students in the Faculty of Arts or to students in the Humanities and Social Sciences in the Faculty of Graduate Studies and Research. Awarded by the Student Aid Office on the basis of financial need and academic promise without restriction as to sex, race, creed, or colour.*

Kellogg Foundation Loan Fund

Established through the generosity of the Foundation to assist graduate nurses who have unexpected expenses while registered in courses at the school. Consult the Director of the School of Nursing.

* Apply to Student Aid Office.

Faculty of Management Student Loan Fund

A student loan fund has been established and is administered by the Student Aid Office.*

George W. Merck Memorial Loan Fund

Established in 1960 to provide loans up to $600 to graduates of any approved medical school who are internes or residents in one of the McGill teaching hospitals. Apply to the Director of the hospital who will submit applications to the Dean of the Faculty of Medicine.

Waddell Loan Fund

Loans from this fund, founded by J. B. Waddell, may be made to graduates and undergraduates in any Department of Engineering.*

* Apply to Student Aid Office.

8.3 McGill Bursaries

Classics or Education:

Irving Orrin Vincent Bursary

Established by Mrs. J. B. Owen in memory of her father, the late Irving Orrin Vincent, B.A. 1907, M.A. 1908, a noted teacher and Principal of Edward VII School in Montreal from 1912 until his death in 1920. Awarded annually by the Student Aid Office on the basis of academic merit and financial need to a graduating student in the Faculty of Arts proceeding towards an M.A. degree in Classics or Education, or M.Ed., or Doctorate in Classics or Education.

Library Sciences:

Syra Deena Tarshis Fleishman Bursary

$200, established by the family of the late Syra Deena Tarshis Fleishman through the National Council of Jewish women. Awarded by the Director of the Graduate School of Library Science and the Student Aid Office, subject to the approval of the Student Aid Committee of the National Council of Jewish Women, to a needy and deserving student in the Graduate School of Library Science irrespective of race or creed.

Awards are made, after due investigation and recommendation, to deserving students who require financial assistance to take the course.

Medicine:

Dr. Milton C. and Nina E. Wilson Award

Established in 1970 by bequest from the late Dr. MiltonC. Wilson, the annual income to be availa the support of undergraduate or postgraduate students in the Faculty of Medicine who are in need of financial assistance. Awarded by the Dean of Medicine.

Religious Studies:

Arthur and Jessie Lochead Bursary Fund.

For students planning to enter the Christian Ministry. Awarded on the basis of need. Apply to the Dean of the Faculty of Religious Studies.

Social Work:

Some sources exist for both loans and bursaries through the School. Inquiries may be made at the time of application for admission to the School. Since the School does not receive all the resources for bursary and/or loan purposes until late during the first term, students should endeavour to make other arrangements for their financial needs, whenever possible, prior to entering the School.

Usual funds available from the School include:

(1) General Bursary Fund
(2) Frances Anderson Memorial Bursary
(3) Alumni Bursary

Federal Scholarships and Bursaries

Under the Federal Welfare Grants program, a limited number of bursaries are available each year to students who commit themselves to enter employment in approved welfare programs. These bursaries are administered and partly financed by the various provinces (with the exception of Quebec which has not been participating in the plan). Application should be made to the Deputy Minister, Department of Public Welfare (or Department of Social Welfare) in the capital of the province where the applicant has legal residence.

The Federal Welfare Grants program also awards a number of scholarships based upon academic achievement. Application should be made to the Welfare Grants Division, Department of Health and Welfare, Ottawa, Ontario.

Overseas students should inquire of their governments concerning the availability of United Nations, Colombo Plan, or their country's own study grants.

Provincial Bursaries

Most provinces offer bursaries on condition that recipients accept employment in those provinces upon graduation. Information should be obtained from Provincial Departments of Welfare. Quebec residents must apply before January 1 for educational bursaries for the following year. Application should be made to the following: Service des Bourses de Perfectionnement, Ministère de l'Education, Hôtel du Gouvernement, Québec, P.Q.

The Canada Student Loan Plan is available in provinces other than Quebec. Inquire of the Province.

Voluntary Agencies Bursaries

Local or national voluntary agencies often offer bursaries similar to those of the Provinces. Information may be obtained from the School.

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1976/77

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of McGill University

The University reserves the right to make changes without prior notice to the information contained in this publication, including the alteration of various fees schedules and the revision or cancellation of particular courses.

Students intending to seek membership in a professional corporation in Quebec are reminded that after July 1, 1976 they will be required to show that they possess a working knowledge of the French language, in conformity with the requirements of the Professional Code (Bill 250) and the Official Language Act (Bill 22).

The Registrar
Macdonald College, Que.
H0A 1C0

Dear Sir:

I am interested in the —

- ☐ B.Sc.(Agr.)
  - ☐ Agricultural Sciences
  - ☐ Biological Sciences
  - ☐ Renewable Resources Development
- ☐ B.Sc.(Agr. Eng.)
- ☐ B.Sc.(F.Sc.)
  - ☐ Consumer Services
  - ☐ Nutrition
  - ☐ Food Chemistry
  - ☐ Food Administration
  - ☐ Dietetics
  - ☐ Food Science
- ☐ B.Ed.
  - ☐ Home Economics Education
- ☐ B.Com.
  - ☐ Hospitality Management
- ☐ Diploma in Agriculture (2 years)

program
at
Macdonald College

Please send me —

☐ an application form for admission in September 1976
☐ or January 1977

☐ information on a career in the above fields

I am now attending .....
school, C.E.G.E.P. or College

..... and am in year .....
place

.....
name

.....
street address or P.O. Box

.....
town or city

REFERENCE DEPARTMENT
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Faculty of
AGRICULTURE

School of
FOOD SCIENCE

1976-77

Macdonald College
Quebec, Canada H0A 1C0
Telephone (514) 457-6580

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CALENDAR FOR SESSION 1976-77

1976

June 10, Thursday & June 11, Friday	Students registering for Soil Science 372-420A report for class at 9:00 a.m.
August 26, Thursday	Students registering for Soil Science 372-420A report for class at 9:00 a.m.
September 6, Monday	LABOUR DAY. Administrative Offices will be closed.
September 7, Tuesday	Students registering for Renewable Resources 375-400A and Zoology 349-418A, report for class at 9:00 a.m.
September 10, Friday	Fall term registration for all new degree and diploma students, 9:00 a.m. to 12:00 noon, and for returning degree and diploma students, 2:00 to 4:30 p.m.
September 13, Monday	Lectures begin for the Fall term.
September 22, Wednesday to September 26, Sunday	Fall Royal and Open House.
September 23, Thursday	Open Students' Society meeting. Classes cancelled from 2:00 to 3:00 p.m.
September 25, Saturday	Annual reunion, Macdonald Branch of McGill Graduates Society.
October 7, Thursday	Last day for course changes for Fall term courses.
October 11, Monday	THANKSGIVING DAY. Classes cancelled.
October 29, Friday	Last day for dropping courses without academic penalty.
November 9, Tuesday	Fall Convocation. Classes as usual.
December 10, Friday	Last day of lectures for Fall term courses in all programs.
December 14, Tuesday to December 22, Wednesday	Examinations in Fall term courses in all programs.

1977

January 5, Wednesday	Winter term registration for all new students.
January 6, Thursday	Lectures begin for Winter term.
January 28, Friday to February 5, Saturday	Winter Carnival. Classes as usual.
February 2, Wednesday	Ski Day. Classes cancelled.
February 7, Monday	Last day for course changes for Winter term courses.
February 10, Thursday	Macdonald College Founder's Day. (Sir William C. Macdonald born February 10, 1831, died June 9, 1917).
February 25, Friday	Last day for dropping Winter term courses without academic penalty.
February 26, Saturday to March 1, Tuesday (incl.)	Mid-term holiday. Classes cancelled.
March 17, Thursday	Open Students' Society Meeting. Classes cancelled 2:00 to 3:00 p.m.
April 6, Wednesday	Last day of lectures in all programs.
April 8, Friday to April 11, Monday	EASTER.
April 13, Wednesday to April 22, Friday	Examinations in Winter term courses in all programs.
April 25, Monday to May 6, Friday	Surveying School of the Department of Agricultural Engineering (336-214L).
June 4, Saturday	Convocation.

1 THE COLLEGE

1.1 ADMINISTRATIVE OFFICERS

McGILL

CONRAD F. HARRINGTON, C.D., B.A., B.C.L. (McG.), C.St.J. **Chancellor**

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EIGIL PEDERSEN, B.A. (Sir G. Wms.), M.A. (McG.), Ed.D. (Harv.) **Vice-Principal (Academic)**

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WALTER F. HITSCHFELD, B.A.Sc. (Tor.), Ph.D. (McG.), F.R.Met.S. **Vice-Principal (Research)**

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JEAN-PAUL SCHULLER, B.A. (Ott.) **Registrar**

1.2 ADMINISTRATIVE OFFICERS

MACDONALD COLLEGE

A. CLARK BLACKWOOD, B.Sc., M.Sc. (Alta.), Ph.D. (Wis.), F.R.S.C. **Vice Principal**

WILLIAM C. SHIPLEY, B.Sc. (Agr.), M.A. (McG.) **Secretary and Coordinator of Administrative Services**

JEAN DAVID, L.S.A. (Montr.), Ph.D. (Calif.) **Student Adviser and Registrar**

MRS. MURIEL WRIGHT, B.A., B.Ed. (Sask.), B.L.S. (McG.) **Librarian**

MISS JUANITA BOSELLI, B.A., D.I.A. (Sir G. Wms.) **Director of Stewart Hall**

WILLIAM R. ELLYETT, B.A. (Sir G. Wms.), B.Ed. (P.E.) (McG.) **Director of Brittain Hall**

MARTIN VAN LIEROP, B.Sc. (Agr.) (McG.) **Director of Extension**

KATHLEEN CLYNES **Librarian, McLennan Travelling Library**

RUDI DALLENBACH, Dip. Agr., Dip. Comm. **Director of Macdonald College Farm**

1.3 INSTRUCTIONAL STAFF

BLACKWOOD, A. CLARK, B.Sc., M.Sc. (Alta.). Ph.D. (Wis.), F.R.S.C. **Dean of the Faculty and Professor of Microbiology**

DAVID, JEAN, L.S.A. (Montr.), Ph.D. (Calif.) **Associate Dean of the Faculty and Professor of Horticulture**

ALI-KHAN, FELICITY (Mrs.), B.Sc. (Hons.) (Canterbury), Ph.D. (McG.) **Assistant Professor of Entomology**

ANASTASSIADIS, PHOEBUS A., B.Agr. (Athens), M.Ed. (Rutgers), Ph.D. (McG.) **Professor of Agricultural Chemistry**

BACHMAN, GORDON, B.Sc. (Nebr.), M.Sc. (Wis.), Ph.D. (Mich. State) **Assistant Professor of Renewable Resources and Extension Specialist**

BAKER, BRUCE E., B.Sc. (Bishop's), D.Sc. (Laval) **Professor of Agricultural Chemistry and Chairman of the Department**

BAKER, ROBERT D., B.S. (S.I.U.), Ph.D. (Ill.) **Associate Professor of Animal Science**

BARTHAKUR, NAYANA N., B.Sc. (Gauh.), M.Sc. (Allahabad), Ph.D. (Sask.) **Associate Professor of Agricultural Physics**

BEVERIDGE, H. J. THOMAS, B.S.A., M.Sc., Ph.D. (U.B.C.) **Assistant Professor of Food Science**

BIBLE, BERNARD B., B.S. (Ohio State), M.Sc., Ph.D. (Mich. State) **Associate Professor of Horticulture**

BIDER, J. ROGER, B.Sc., M.Sc., Ph.D. (Montr.) **Professor of Wildlife Biology (on leave)**

BROUGHTON, ROBERT S., B.S.A., B.A.Sc. (Tor.), S.M. (M.I.T.), Ph.D. (McG.) **Professor of Agricultural Engineering**

BUCKLAND, ROGER B., B.Sc. (Agr.) M.Sc. (McG.), Ph.D. (Maryland) **Associate Professor of Animal Science**

CHEVRIER, MICHELINE, B.A., M.A. (Montr.) **Assistant Professor of Sociology**

COMMON, R. HADDON, B.Sc., M.Agr. (Belf.), Ph.D., D.Sc., (Lond.), D.Sc.,LL.D. (Belf.), F.R.I.C., F.A.I.C., F.R.S.C. **Emeritus Professor of Agricultural Chemistry**

CURRIE, LINDA P. (Mrs.), B.Sc. (Mount St. Vincent), M.Sc. (McG.), P.Dt. **Lecturer in Animal Science**

DeVOE, IRVING W., B.Sc. (Aurora), Ph.D. (Oregon) **Associate Professor of Microbiology**

DION, H. GEORGE, B.S.A. (Sask.), Ph.D. (Wis.), D.Sc. (Laval), F.A.I.C. **Professor of Soil Science (on leave)**

DONEFER, EUGENE, B.S., M.S. (Corn.), Ph.D. (McG.) **Professor of Animal Science**

DOUGLAS, RICHARD H., B.Sc. (Alta), M.A. (Tor.), Ph.D. (McG.)
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DOWNEY, BRUCE R., D.V.M. (Tor.)
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DuPORTE, E. MELVILLE, D.Sc. (Carl.), B.S.A., M.Sc., Ph.D. (McG.)
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ESTEY, RALPH H., B.Ed. (U.N.B.), M.S. (Maine), D.I.C. (Imp. Coll.), B.Sc. (Agr.), Ph.D. (McG.), F.L.S. **Professor of Plant Pathology and Chairman of the Department**

FANOUS, MAMDOUH A., B.S. (Cairo), M.Sc., Ph.D. (Okla. State)
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Assistant Professor of Renewable Resources

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GENDRON, GHISLAIN, B.A., B.Sc. (Laval), M.S., Ph.D. (Wis.) **Assistant Professor of Agronomy**

GEROLS, JACQUELINE (Mrs.), L.-ès-L. (Bordeaux), M.A. (Montr.)
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GRANT, WILLIAM FREDERICK, M.A. (McM.), Ph.D. (Virginia), F.L.S.
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KEVAN, D. KEITH McE., B.Sc. (Edin.), A.I.C.T.A. (Trin.), Ph.D. (Nott.), F.R.S., (E), M.I. Biol.
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KLINCK, HAROLD R., B.S.A. (Tor.), M.Sc., Ph.D. (McG.) **Professor of Agronomy**

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MacLEOD, ROBERT A., B.A., M.A. (U.B.C.), Ph.D. (Wis.), F.R.S.C.
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MACONOCHIE, HELEN L. (Mrs. A.K.), M.A. (Tor.), P.Dt. **Associate Professor of Food Science**

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MURPHY, M. ELIZABETH (Mrs.), M.Ed. (McG.)
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PARNIS, ELIZABETH (Mrs.), B.Sc. (Liverpool), M.Sc. (McG.)
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Assistant Professor of Food Science

STEPPLER, HOWARD A., B.S.A. (Man.), M.Sc., Ph.D. (McG.), F.A.I.C.
Professor of Agronomy and Chairman of the Department

STEWART, ROBIN K., B.Sc. (Agr.), Ph.D. (Glas.)
Associate Professor of Entomology and Chairman of the Department

TANNER, CHARLES E., B.Sc. (Purdue), M.Sc., Ph.D. (McG.) **Professor of Parasitology (Faculty of Science)**

TAPER, CHARLES D., M.S.A. (U.B.C.), Ph.D. (Man.) **Associate Professor of Horticulture and Chairman of the Department**

TITMAN, RODGER, B.Sc. (McG.), M.Sc. (Bishop's), Ph.D. (U.N.B.)
Assistant Professor of Wildlife Biology

TOUCHBURN, SHERMAN P., B.S.A., M.S.A. (U.B.C.), Ph.D. (Ohio State)
Professor of Animal Science and Chairman of the Department

VAN LIEROP, MARTIN, B.Sc. (Agr.) (McG.)
Assistant Professor of Renewable Resources and Director of Extension

VICKERY, VERNON R., B.Sc. (Agr.), M.Sc., Ph.D. (McG.) **Professor of Entomology and Curator, Lyman Entomological Museum and Research Laboratory**

VISWANATHAN, MURI A., B.Sc. (Agr.) (Madras), Assoc. I.A.R.I. (New Delhi), Ph.D. (McG.)
Assistant Professor of Plant Pathology

WARKENTIN, BENNO P., B.S.A. (U.B.C.), M.S. (Wash.), Ph.D. (Corn.)
Professor of Soil Science

WATSON, ALAN K., B.Sc. (Agr.), M.Sc. (U.B.C.), Ph.D. (Sask.) **Assistant Professor of Agronomy**

WIGDOR, SAMUEL, B.Sc. (McG.), B.Sc. (Agr.), M.S. (Mich. State)
Sessional Lecturer in Horticulture

WOODLAND, DENNIS W., B.A., M.A. (Walla Walla), Ph.D. (Iowa State)
Assistant Professor of Plant Pathology and Curator, McGill University Herbarium

1.4 MACDONALD COLLEGE

Macdonald College, which was founded and endowed by the late Sir William C. Macdonald, is incorporated with McGill University. The Faculty of Agriculture, which includes the School of Food Science, is located on the Macdonald College campus at Ste. Anne de Bellevue.

Ste. Anne de Bellevue, Que., is twenty miles west of Montreal, and can be reached by Canadian Pacific Railways, provincial highways No. 2 and No. 20 and the Trans-Canada highway. Travellers by air book to the Montreal International Airport at Mirabel, and drive to Dorval, which is approximately ten miles east of the College. The Anglican Church of Canada, the United Church of Canada, the Roman Catholic Church and the Presbyterian Church all have churches nearby. Students of all religious denominations are free to enter Macdonald College. Branches of the Bank of Montreal and of the Banque Canadienne Nationale serve the community.

POST OFFICE

The College has its own post office and mail should be addressed to Macdonald College Campus of McGill University, Macdonald College, Que., H0A 1C0. The address for freight and express parcels, and for telegrams, is Macdonald College, Ste. Anne de Bellevue, Que.

FACULTY OF AGRICULTURE

The work of the Faculty falls into three main divisions: teaching, research, and extension in Agricultural Sciences, Biological Sciences and Renewable Resources Development. Teaching and research form the major part of their work. Extension work is undertaken by departments as the need or opportunity may arise.

SCHOOL OF FOOD SCIENCE

The School of Food Science is an administrative unit within the Faculty of Agriculture. The function of the School is teaching to provide the professional qualifications necessary for dietetics and food technology and to provide strong academic training in consumer services, home economics education, nutrition, food chemistry and hospitality management.

THE INSTITUTE OF PARASITOLOGY

The Institute of Parasitology, attached to the Faculty of Science, is located at Macdonald College. Research on animal parasites and the instruction of graduate students are the main functions of this Institute.

THE LYMAN ENTOMOLOGICAL MUSEUM AND RESEARCH LABORATORY

Originally established in 1914 and formerly housed in the Redpath Museum, the Lyman Entomological Museum was moved to the Biology Building, Macdonald College, in 1962. It houses the largest University collection of insects in Canada, second only in size to the National Collection. The Museum has also an active graduate research program in association with the Department of Entomology. Study facilities are available, on request from the Curator, to all bona fide students of entomology.

BRACE RESEARCH INSTITUTE

The Brace Research Institute, attached to the Faculty of Engineering, is located at Macdonald College. The principal area of activity is research into water supply for arid areas, including desalination of saline water. This involves the use of solar, wind and biomass energies, greenhouse agriculture and appropriate technology.

2 GENERAL INFORMATION

2.1 FACILITIES

Sir William Macdonald planned so well for future needs that the facilities of Macdonald College for instruction in agriculture and food science are still provided almost entirely in the buildings constructed in 1905. The picturesque brick buildings and red-tile roofs of the Chemistry, Biology, Agriculture and Main Buildings, together with Stewart, Laird and Brittain Halls (residences for women and men), and the well laid out grounds on the shore of Lac St. Louis, combine to provide a campus which is attractive and functional. These facilities are now shared with John Abbott College.

Laboratory and lecture rooms are well supplied with modern and efficient teaching facilities, while the reference section of the Library and the research laboratories associated with the various science departments are well equipped to permit the vigorous investigation of problems at the post-graduate level.

The land associated with the College consists of approximately 1,600 acres, at the western end of the Island of Montreal, and is in the Town of Ste. Anne de Bellevue. The campus proper consists of about 200 acres south of Routes 2-20. The College farm represents a wide variety of the soils of the Ottawa St. Lawrence Valley Lowland. The principal purpose of the farm is to provide facilities for teaching, demonstration, and applied research by the various departments of the faculty.

The Morgan Arboretum, established in 1945, has 540 acres of natural woodlands and plantations set up and operated as a model for integrated multiple use forestry. It combines forest production with intensive recreational use in an urban region. The northern hardwood forest is used for research, teaching, and demonstration projects relating to forest resources and values. Groups of all the

Canadian native trees and many useful and important exotics are also present. The Arboretum features a botanical trail, a bird sanctuary, twelve miles of wooded trails, a variety of forest ecosystems, soil and water conservation projects, forest operations such as reforestation, plantation management, timber harvesting and maple syrup production, and related forestry-wildlife ecological activities. An intensive nature interpretation program is offered for school children.

The Macdonald College Library collection includes research and teaching materials for the agriculture, biology, environment and food sciences. It is a depository for many government publications and subscribes to 1010 serial titles. Among its special collections is the Lyman entomological book and journal library. The total collection now numbers 85,000 volumes of books and journals, and 16,500 volumes of government documents.

2.2 EXTENSION DEPARTMENT

COMMUNITY PROGRAMS DIVISION

This division is responsible for College extension activities in rural communities by providing liaison between the College and those involved in agriculture, home management, family living, resource development and environmental control. Through the organization of seminars and workshops in the country, through consultation with individuals and groups, the resources of Macdonald College and the University are made available to those without daily access to the campus. In addition, radio items and special weekly newspaper columns provide a link between the campus and the community.

This division also coordinates and encourages the extension services of various departments of Macdonald College. These are represented by such activities as the Soil Testing Service, the Dairy Herd Analysis Service and the Agricultural Engineering Consulting Service. Each of the College's departments welcomes requests for information on subjects relating to agriculture and food science.

EXTENSION FILM LIBRARY

The Extension Department operates a film library service for schools, community organizations and individuals. Advice with respect to program planning and the use of audio-visual aids with special emphasis on films is available from the Library. A rental fee is charged for films and other audio-visual aids.

EXTENSION COURSES

Several courses are offered in a wide variety of technical and popular subjects. These courses are generally offered in the evening during the regular academic year.

As well, several conferences, workshops and seminars are held each year at the College. The Department also cooperates with regional school boards and community schools in planning programs and assisting in adult education programs.

MACDONALD JOURNAL

The Journal is a monthly publication dealing with matters of interest to the rural community. Articles and reports by Macdonald College staff, the Ministry of Agriculture of Quebec (M.A.Q.), the Quebec Women's Institutes Inc. and other contributors keep its subscribers up to date.

COLLEGE TOURS

Visits to the College from individuals or groups with a common interest in the farm, the home, are always welcomed.

Groups of fifteen or more requiring meals are asked to give two weeks' advance notice and to confirm the numbers in the group not later than three days before arrival. All requests for visiting privileges should be addressed to the Extension Department, P.O. Box 237, Macdonald College, Que., H0A 1C0, who will be pleased to quote rates for meals, if required.

2.3 STUDENT PLACEMENT SERVICE

The Canada Manpower Service, in cooperation with Macdonald College, has established a Student Placement and Career Counselling Office on the campus to bring together graduating students and potential employers. In addition to permanent employment, the Service also endeavours to assist both undergraduates and employers interested in summer employment and part-time work. The Placement Office operates on a year-round basis, and its services are available to both students now registered and graduates of earlier years.

2.4 SUMMER SCHOOL

Courses are available at Macdonald College during the summer session. See the McGill University Summer Session Announcement, available from the Registrar's Office, Macdonald College.

2.5 REGISTRATION

Students are required to register at the times indicated in the calendar for the program and year in which they have been accepted, and before entering residence to obtain a residence card during registration. Registration at a later date is permitted only to those who obtain the consent of the Dean of the Faculty or the Director of the School of Food Science.

All students entering for the first time are required to register in advance of upper classmen. This period is devoted to a program of orientation, in which efforts are made to familiarize them with their physical and cultural surroundings, and to acquaint them with the scope of the various fields of learning

at the College. Attendance at all sessions of New Students Orientation is compulsory.

Upon registering students are required to sign the following declaration: "I hereby accept and submit myself to the rules and regulations of Macdonald College, and of the Faculty or School thereof in which I am registered, and to any amendments thereto which may be made while I am a student of the College, and I promise to observe the same."

Students are not permitted to enter any class until they have registered.

2.6 FEES

The University reserves the right to make changes without notice in its published scale of tuition, board and room, and other fees. Fees are refundable as described under the heading: Regulations Concerning Payment and Remission of Fees.

TUITION AND OTHER FEES

In the 1974-75 academic session, the College introduced a new system of tuition fee assessment based on a per credit charge where applicable. In 1976-77, this fee will be $19.00 per credit and will include all the regular charges such as registration, tuition, laboratories and libraries. Student Services fees and Students' Societies fees are separately assessed in a manner appropriate to those two functions and must be paid at the same time as the tuition fees.

A student who is taking an academic load of 30 credits would pay $570 in tuition fees ($19 × 30) plus fees for Student Services and Students' Societies. Tuition fees will vary according to the number of credits taken but Student Services and Students' Societies fees per term will be as shown below for all full-time students. There are no tuition fees for the diploma in Agriculture.

Full Time Students

Diploma in Agriculture	No tuition fees
Student Services	$35.00
Macdonald Students' Society	9.00
Centennial Centre	7.50
Undergraduate Societies	.50

PART TIME, SPECIAL AND VISITING STUDENTS

The tuition fee assessment is $19 per credit. In addition, the following fees per term will be assessed:

a) If taking 9 to 11 credits:	
Student Services	$17.50
Macdonald Students' Societies	17.00
b) If taking more than 4 but less than 9 credits:	
Student Services	10.00*
Macdonald Students' Societies	5.00
c) If taking 4 credits or less:	
Student Services	5.00*
Macdonald Students' Societies	5.00

*Foreign Students see p. 15 also.

FOREIGN STUDENTS HEALTH INSURANCE

Compulsory Health Insurance ..... $85 for single and $150 for married students.

SPECIAL FEES AND PENALTIES

Application for Admission	$15.00
Late registration (unless excused by the Dean or Director)	25.00
Late payment during first thirty days after registration	10.00
Late payment after thirty days	25.00
Residence caution deposit	50.00
Graduation Fee**(including those who graduate *in absentia*)	10.00
Duplicate diploma	10.00
Certified transcript of student's record:	
First two copies, each	1.00
Additional copies made at the same time, each	.25
Re-reading examination paper	10.00
Supplemental examination, per paper	
— written at College	10.00
— written elsewhere	25.00

**Graduation fee: Applications by students who expect to graduate at the Spring Convocation must be filed by March 1st of each year and by those who expect to graduate at the Fall Convocation by August 1st of each year. An application form will be mailed to each eligible student and must be returned to the Registrar's Office, McGill University, together with the graduation fee of $10.00 by the appropriate date listed above. This fee will cover all expenses in connection with graduation including academic dress. It is the student's responsibility to ensure that his or her name is included in the graduation list by notifying the Registrar's Office, Macdonald College.

BOARD AND RESIDENCE

Board and residence are paid separately. The fees, per session, exclusive of the Christmas holidays, are:*

The Dining Room is open 5 days per week exclusive of statutory holidays designated by the University. Students buy individual meals on a cafeteria basis and pay cash or with tickets sold in book form. Approximate cost for session, $700.00.

Room (double occupancy)..... $560.00

Students are not encouraged to remain in residence during the Christmas holidays. However, if special permission to remain in residence has been obtained from the Residence Business Office due to exceptional circumstances the room cost for this period will be $20.00 for a week or any part of a week.

Single Rooms

There are a few single rooms available in each residence at an additional cost of $60.00.

APPROXIMATE COST PER SESSION

Course	Total Fees	Board (optional)	Residence	Textbooks Supplies, etc. (estimate)	Total
Undergraduates (30 credits)	$674.00	$700.00*	$560.00*	$125.00	$2149.00*
Diploma in Agriculture	104.00	700.00*	560.00*	75.00	1,529.00*

**Subject to change without notice.*

SUNDRY

Books

The prescribed textbooks, and classroom and laboratory supplies, may be purchased at the College Book Shop — estimated minimum cost is $125.00.

Supplies

Materials and supplies required for classes in Textiles and Clothing are provided by the students concerned and purchased at the direction of the instructor.

Uniforms

Uniforms are required for food laboratories; students in the B.Sc. (F.Sc.) program will be advised of the uniform requirements on acceptance or promotion.

REGULATIONS CONCERNING PAYMENT AND REMISSION OF FEES

1. Fees for tuition and for board and residence are due and payable to the Cashier at the time of registration. A late fee of $10.00 is charged for payment during the first 30 days after registration and $25.00 thereafter.
2. Fees may be paid in two instalments, one at the beginning of the session, and one on January 15 following provided that an application for deferred payment of fees is completed and submitted at the time of registration. Information on payment of fees is available from the Registrar's Office.

In special cases of hardship, application may be made for financial assistance. See section on Scholarships, Prizes, Bursaries and Loan Funds.

3. As soon as possible after the dates prescribed for the payment of fees indicated in 2 above, a list of the registered students whose accounts with the Secretary are in arrears will be sent to the Dean or Director of the Faculty or School concerned, on receipt of which the Dean or Director shall suspend these students from attendance; they will not be readmitted to classes until the account is settled, or a satisfactory arrangement is made with the Secretary.
4. Students who have fees or other accounts outstanding at the end of the session will not be entitled to reports of standing, transcripts of records or diplomas, until these accounts are paid.
5. A student who withdraws from the College during the course of the academic year must do so at the Registrar's Office and return his identity card. If in residence he must return his residence card to the Residence Office.
6. In the case of students who leave the College before the end of the academic year, but receive full credit for the year towards their degree, there shall be no refund of tuition fees.
7. In the case of students who leave during the academic year and do not receive credit beyond the period of their attendance, tuition fees shall be remitted on the basis of a formula based on length of attendance.

8. Residence fees are payable for the full academic year and will not be refunded, except in special circumstances.
9. Avoidable breakage or damage to College property or equipment by a student is charged to him on receipt of a report from the chairman of the department concerned.

The Cashier's Office is open to receive payments from 9 a.m. to 12:30 p.m. and 2:00 p.m. to 4:30 p.m., Monday to Friday.

All cheques, money orders, etc., should be drawn to the order of "The Secretary, Macdonald College," and should be made payable in Canadian funds.

2.7 RESIDENCE

Men students in residence live in Brittain Hall, named in honour of the late Dr. W. H. Brittain, Vice-Principal of Macdonald College from 1935 to 1955. The residence for women is Stewart Hall, named in honour of the late Mr. and Mrs. Walter M. Stewart, long-time friends and benefactors of the College. Laird Hall, named in honour of the late Dr. Sinclair Laird, Director of the School for Teachers from 1913 to 1949 is a co-ed. residence for graduate students and seniors.

Each residence is under the control of a director who is appointed from the staff. All applications for residence and inquiries concerning the residences should be addressed to the Residence Office, Macdonald College, Que., H0A 1C0.

APPLICATION FOR RESIDENCE ACCOMMODATION — NEW STUDENTS

A form for applying for residence accommodation and detailed information about the residence are sent to prospective students when they are accepted in the Faculty of Agriculture or the School of Food Science. When the form is received from the College it must be completed and returned immediately to the Residence Office. A caution deposit of $50.00 (not part of fees) must accompany the application for accommodation. The College guarantees to refund the deposit if the applicant cancels the room reservation at least three weeks prior to the date of registration.

APPLICATION FOR RESIDENCE — RETURNING STUDENTS

Returning students in the upper years must reserve residence accommodation on the form available from the Residence Office. This must be submitted by June 30 together with the usual $50.00 deposit.

ROOM OCCUPANCY

Students will not be admitted to residence before the date set for registration. Students from foreign countries or students from a distance may be admitted early in exceptional circumstances. Permission must be requested by letter and a reply obtained in writing from the Residence Office before the student leaves home.

Students who return to write supplemental examinations will be admitted to residence on a specified date and must make application to the Residence Office on the form sent by the Registrar's Office with notice of the examination schedule.

Student officers may be admitted before the opening date of courses, if permission is granted by the Residence Office.

Students from a distance may remain in residence during the Christmas holidays, provided permission is granted by the Residence Office.

Students must vacate their rooms at the end of the regular session. The residences are used in the summer for meetings, conferences and summer school and the rooms must also be available for cleaning and maintenance. Only under exceptional circumstances will a student be granted permission to remain in residence during the summer months. Exceptions may be made for students who are employed at the College. In all cases permission must be requested from the Residence Office.

RESIDENCE FEES

Residence fees cover only the regular periods when classes are in session. An additional fee is charged for the Christmas holiday period and for residence accommodation during the supplemental examination period in June.

NON-RESIDENT STUDENTS

Students living at home or out of residence are subject to College discipline as outlined under CONDUCT AND DISCIPLINE. The Student Affairs Discipline Committee of the Students' Council is responsible for the maintenance of good order and discipline in all areas on the campus and at student sponsored activities away from the campus.

Non-resident students may not stay overnight in any residence without permission of the Residence Office. Common rooms are provided for non-resident students in the Centennial Student Centre. The athletic facilities (gymnasium and pool in both the men's and women's residences are available to non-resident students at appropriate times.

Meals are available in the College dining room for non-resident students.

Lockers are available in the basement of the Student Centennial Centre for non-resident students. These may be arranged for at the Student Centennial Centre one week after registration.

STUDENT AUTOMOBILES

Students will be allowed to park automobiles on the campus provided they observe the parking regulations and other rules applicable to students' automobiles. Students are required to obtain a permit on registration day. Permits will not be issued to students who do not carry car insurance for public liability, property damage and

personal injury. Students must park in Student Parking Areas only.

2.8 EXTRACURRICULAR ACTIVITIES

The program of extracurricular activities is designed to complement the program of studies and to promote both fellowship and wider experiences for the student.

A wide program of athletics is available to men and women, particularly at the intramural level, supervised by qualified instructors. There are facilities for track and field, football, hockey, basketball, volleyball, woodsmen, tennis, badminton, aquatic sports, curling, and ice skating on Glenfinnan Rink.

The Macdonald College Students' Council sponsors a newspaper, The Harvest, a Yearbook, Clan Macdonald, a photography department, a Winter Carnival which is highlighted by a widely attended international woodsmen's competition and numerous other activities. Dances and informal get-togethers are features of student life with the Centennial Centre a favourite meeting place.

Macdonald College can also boast of a Student Union Building. At the corner stone laying ceremony in October of 1967 it was fittingly named "Centennial Centre". The building includes many facilities for extracurricular activities, recreation and relaxation, including a lounge, snack bar, meeting and board rooms, book shop, publication offices, ball room, and areas set aside for table tennis, billiards, a bar area, and a discotheque. The Centennial Centre is a students' facility and students are active in all facets of planning and management of this attractive focal point of campus life.

On Founder's Day, which is celebrated each year on February 10, a special dinner and a musical or dramatic program are provided through the generosity of Mr. and Mrs. David M. Stewart. The Memorial Assembly is another annual event, held to commemorate the sacrifices of Macdonald men and women in two World Wars.

2.9 UNIVERSITY HEALTH SERVICE

The University Health Service comprises a main clinical centre at 517 Pine Avenue West, and an infirmary at Royal Victoria College. Equal importance is placed on the physical and mental health of students and the medical staff are appropriately qualified to deal with both aspects. Medical clinics operate daily, five days of the week from 9:00 a.m. — 5:00 p.m.

PARTICIPATION IN ATHLETICS

A student wishing to participate in athletics in any academic year must first obtain a permit from the University Health Service. Permission will depend upon the initial medical report from the student's own physician, supplemented by such other medical examination as may be thought necessary in the Health Service. A student who has received medical attention for an illness or accident must be declared fit by the Health Service before he may again participate in athletics.

MEDICAL EXPENSES

The cost of medical examinations carried out at the Health Service and of Medical care obtained through its general or mental health clinics is covered in part by University Funds. Residents of Quebec will be covered for services under Medicare. Non-Quebec Canadian Students are strongly urged to obtain comprehensive health insurance in their home province. The cost of drugs prescribed by the Health Service will be borne by the student.

FOREIGN STUDENTS

All full-time foreign students (including landed immigrants during their first year at the University) must take out the Health Insurance policy which is available on a group basis at the cost of $85.00 per single student or $150.00 for a married student per year. They are required to pay the annual premium with the first instalment of their fees. The University will forward these premium payments to the Insurance Company. In general, the policy provides for payments towards hospital, surgical, medical, diagnostic and other medical expenses. Students should make themselves aware of the limitations of such a policy.

Location:	517 Pine Avenue West
Appointment and General Office	392-5441
Mental Health Section	392-5449

2.10 CONDUCT AND DISCIPLINE

"The Vice-Principal of Macdonald College and its Dean of Students each have jurisdiction over all offences committed by students registered at Macdonald College and over all offences committed by students on or about Macdonald College. Directors of residences have jurisdiction over all offences committed in or about their respective residences". McGill University — Code of Student Disciplinary Procedures, 1965).

The Macdonald College practice has been to delegate the disciplinary function to the students in the first instance. The Students' Council has accepted this responsibility and has designated committees to act on its behalf. These committees are (1) the Student Affairs Disciplinary Committee for affairs outside of residence, (2) the Women's Residence Committee, (3) the Men's Residence Committee and (4) the Post Graduate Sub-committee on Discipline. The final committee of student appeal is the judicial wing of the Students' Council, namely (5) the Student Disciplinary Board. Serious

breaches of discipline are referred to the University Committee on Student Discipline.

Students found guilty of improper conduct, violation of rules or wilful causing of damage to persons or property, shall be liable to discipline as set forth in the Code of Disciplinary Procedures approved by the Senate of McGill University in 1965, a copy of which is available on request from the Vice-Principal of Macdonald College. The Code specifies that discipline may include: imposition of fines or assessments for damage caused by individuals or groups; posting of security for good behaviour; reprimand; imposition of conduct probation; suspension or expulsion from classes or residence; expulsion from the University.

Any student who is unwilling to submit to the demands of college life, or whose work is definitely unsatisfactory, may be placed on probation, or may be required to withdraw from the College.

All students registered at Macdonald College are obliged to inform themselves of the rules and regulations of the College. A few of these are listed below but the main body of them will be found in the Residence Handbook or in other documents distributed at registration.

Possession or consumption of liquor by students is forbidden on the campus, except in authorized places and with special permission.

Initiation or hazing in any form is forbidden.

Unauthorized entrance to Residence or College buildings is forbidden. Violation of this rule is sufficient reason for expulsion.

Gambling is not permitted on College grounds.

Tampering with fire fighting equipment is forbidden.

Students are not permitted to bring firearms into the Residences nor is the use of firearms allowed on College property.

3 SCHOLARSHIPS, PRIZES ETC.

3.1 GENERAL

Students registered in the Faculty of Agriculture and the School of Food Science are eligible for Entrance and other Scholarships. Prizes, Bursaries and Loans which are open to all students at McGill University are described in the Undergraduate Scholarships and Awards Announcement obtainable from the Registrar, McGill University, P.O. Box 6070, Montreal, or the Registrar, Macdonald College, Que. H0A 1C0. In addition, the following loans and special awards are available to students registered in Agriculture and Food Science.

3.2 DEGREE PROGRAMS

3.2.1 Scholarships

3.2.1.1 CANADIANS AND LANDED IMMIGRANTS

A scholarship is granted for distinguished academic standing. In addition to Entrance Scholarships open to all students at McGill University (see Undergraduate Scholarships and Awards Announcement), the following scholarships are open to students in the Faculty of Agriculture and the School of Food Science.

ELIZA M. JONES SCHOLARSHIPS IN AGRICULTURE AND FOOD SCIENCE. — Established by a bequest of the late F.P. Jones in memory of his mother.

Eleven scholarships of $550 each awarded yearly as follows: four scholarships to accompany the Macdonald and Stewart Medals in first and second years; two scholarships to high ranking students entering in January from CEGEP or the equivalent, one for Agriculture, one for Food Science; two scholarships to students entering from the Nova Scotia Agricultural College at any level; and three scholarships to high ranking students at any level.

MACDONALD BRANCH OF THE McGILL GRADUATES SOCIETY ENTRANCE SCHOLARSHIPS. — Eight scholarships of $1000 each will be available to students entering Bachelor's degree programs in the Faculty of Agriculture and in the School of Food Science. Each applicant will be considered on his or her own merits taking into account all or any of the following: academic achievement, participation in athletics, student affairs activities or community service projects. Applications must be submitted prior to August 1 each year.

UNIVERSITY SCHOLARSHIPS. — After one year at the University, University Scholarships may be awarded by the University Scholarships Committee to students in any year of any undergraduate faculty for exceptionally distinguished work in the regular University examinations. No application is required.

All University Scholarships are renewable if in the opinion of the University Scholarships Committee, the holders maintain a sufficiently high academic standing.

University Scholarships carry a nominal recognition ($100) of their outstanding achievement. Where there is financial need, however, winners should apply, as soon as possible, to the Student Aid Office, McGill University.

HOLLIS J.M. FISKE SCHOLARSHIP. — Awarded to a student in the First or Second years of the B.Sc. (Agr.) program for academic achievement on registration in the succeeding year of the course. Preference will be given to a Canadian.

RALSTON PURINA SCHOLARSHIP. — A scholarship of $650 to be awarded to a student in the Agricultural Engineering, Animal Science or Food Science options entering the senior year. In selecting the winning student, consideration will be given to high academic standing, a record demonstrating good citizenship, sincerity of

purpose in agriculture as the chosen field and demonstrated financial need.

3.2.1.2 OVERSEAS STUDENTS

Non-Canadian students are ineligible for entrance scholarships. Overseas students and non-Canadians from North America are expected to present evidence to immigration authorities that they have adequate funds for their studies in Canada. After completing one year of study at the University, students are eligible for scholarships awarded annually on the results of the sessional examinations.

COMMONWEALTH AND COLOMBO PLAN SCHOLARSHIPS. — These are rarely available for undergraduate studies, but undergraduates from countries where higher educational facilities are inadequate should inquire at their national departments of education.

FOREIGN GOVERNMENT SCHOLARSHIPS. — Several non-Canadian Governments have regional or federal government plans for sending selected students to study in Canada.

SUMMER WORK AND PART-TIME WORK. — When the general employment situation permits, immigration authorities may allow non-Canadians to take employment in the summer vacation if such work is related to their studies.

Bursaries

A bursary is a financial award which does not have to be repaid. It is made, on the basis of need, to a student whose academic achievement makes him worthy of support. Bursaries are not awarded to students with G.P.A. of less than 2.4 in their previous year's work. In addition to bursaries open to all students at McGill University the following bursaries are open to Faculty of Agriculture and School of Food Science students. Apply to the Registrar's Office, Macdonald College, before September 15th, if you think you might be eligible for bursaries marked with an asterisk.*

*ALUMNI BURSARIES. — Two bursaries ($200 each) offered by the Macdonald branch of the McGill Graduates' Society, one for a student in the B.Sc. (Agr.) program and one for a student in the B.Sc. (F.Sc.) program at the First or Second year levels.

ANNETTE S. HILL MEMORIAL BURSARIES. — Established in 1962 to assist young men of the Protestant faith and of good character from the Maritime Provinces or the Province of Ontario to obtain a college education. Apply to the McGill Student Aid Office or to the Registrar, Macdonald College.

*BETA SIGMA PHI BURSARY. — A bursary of $500, to be awarded annually for three years, commencing in 1972, to a student in the School of Food Science who has satisfactorily completed First or Second year and is in need of financial assistance to continue in the program.

CHILDREN OF WAR DEAD (EDUCATION ASSISTANCE) ACT. — Under this Act fees and monthly allowances are provided for children of veterans whose death was attributable to military service. Inquiries should be directed to the nearest District Office of the Department of Veterans Affairs.

*HOTEL AND RESTAURANT SUPPLIERS ASSOCIATION BURSARY. — A Bursary of $200 to be awarded to a student in the School of Food Science who has satisfactorily completed First or Second year and is in need of financial assistance to continue in the program.

*MARCIA L. GAIRDNER BURSARY. — A Bursary of $200 value established in memory of Marcia L. Gairdner (nee Millard), B.Sc. (H.Ec.) 1968 by her parents and her brother, awarded annually to a student in need of financial assistance, in the second year of B.Sc. (F.Sc.) program. Preference will be given but not necessarily restricted to a candidate who attended either Ridgemont or Rideau High School in Ottawa.

*OTTAWA VALLEY GRADUATES' SOCIETY BURSARY of the value of $100, given through the Ottawa Valley Branch of the Graduates' Society, open only to bona fide residents of the territory of the Society.

*STE. ANNE DE BELLEVUE WOMEN'S UNIVERSITY CLUB BURSARY. — A Bursary of $300 is donated by the Ste. Anne de Bellevue Women's University Club to a woman student in any year of any program in the Faculty of Agriculture or the School of Food Science who is in good standing academically and needs financial assistance.

*JANET MORRISON ROBB BURSARY FOR WOMEN. — The income for one year from an endowment established by the late Hon. James A. Robb, formerly M.P. for Chateauguay-Huntingdon and Minister of Finance, Canada, in memory of his daughter, Janet Morrison Robb, wife of Hugh Harvie Donald.

Preference is given to women students resident in either of the counties of Chateauguay, Huntingdon, or Beauharnois, who are daughters of widows or widowers of limited or moderate means, or daughters of disabled Canadian soldiers who have seen active service.

FISHER TRUST FUND. — In the memory of the late Hon. Sydney A. Fisher, formerly M.P. for Brome County and Minister of Agriculture, Canada. Two grants, normally of $150 each, awarded to students in either the degree or the diploma programs in Agriculture. Under certain conditions, consideration will also be given to applicants in the School of Food Science. Available only to candidates whose parents and guardians have been domiciled in Brome County for at least twelve months prior to the registration date of the study year for which financial assistance is requested. These awards will be continued from term to term only upon favourable report from the Dean of the Faculty of Agriculture or the Director of the School of Food Science.

Application forms may be obtained from Mr. Stanley Quilliams, Secretary, Fisher Trust Fund Trustees, Foster, Que. Completed application forms should reach him by September 1.

KETCHUM BURSARY. — $100, offered by the Ketchum Manufacturing Company Limited of Ottawa to a worthy student entering the last or second to last year of the degree program in Animal Science. Consideration is given to the applicants' need for assistance.

CANADIAN FEED MANUFACTURERS' ASSOCIATION BURSARY. — $200, awarded annually to a worthy student who has completed at least one year in the Animal Science major. Consideration will be given to students with financial need and good academic standing.

THE WILLIAM ROWLES BURSARY. — $300 each year from a fund set up in honour of Professor Emeritus William Rowles, who was for many years an outstanding teacher of physics and mathematics in the Faculty of Agriculture. To be given to a student in good academic standing who has financial need.

*THE COLONIZATION SOCIETY'S REGIONAL BURSARIES, available to graduates from the following schools: Gaspesia, New Carlisle; Alexander Galt, Lennoxville; Massey-Vanier, Cowansville; Chateauguay Valley, Ormstown; Richmond, Richmond; Pontiac, Shawville; Philemon Wright, Hull; Laurentian, Lachute.

These bursaries are open to students who register in either the degree course or the diploma course in Agriculture. Preference will be given to students from farm families. Apply to the Registrar, Macdonald College, by September 1.

3.2.3 Medals, Prizes and Awards

3.2.3.1 B.Sc. (F.Sc.) PROGRAM

MEDALS

STEWART MEDALS. — Named in recognition of the long and continued support and interest of the late Mr. and Mrs. Walter M. Stewart in the academic progress and welfare of Macdonald College students, and awarded for academic achievement to the students ranking highest in the First and Second years of the B.Sc. (F.Sc.) program.

GOVERNOR GENERAL'S MEDAL. — His Excellency the Governor General of Canada donates a medal to be awarded to the student in Food Science who ranks highest in the graduating class.

PRIZES

MARGARET A. MILTON MEMORIAL PRIZE. — A prize established in memory of Margaret Ann Milton, B.Sc. (H.Ec.) 1965, awarded annually to a student in the Second year of the B.Sc. (F.Sc.) program, based on the results of the final examinations.

NORAH E. HOLCOMB MEMORIAL PRIZE. — An entrance award of $100 given in memory of Mrs. Norah E. Holcomb, supervisor of Home Economics in Montreal. To be awarded to a student who has achieved academic excellence and enrols in the first year of the two-year program at Macdonald College leading to the B.Ed. degree in Home Economics.

MRS. ALFRED WATT MEMORIAL PRIZE. — Value $100, established by the Quebec Women's Institutes as a memorial to a distinguished Canadian, Mrs. Alfred Watt, M.B.E., who introduced the idea of Women's Institutes in England and Wales and was President of the Associated Country Women of the World from 1930 to 1947. Awarded to a student from rural Quebec in the First or Second year of the B.Sc. (F.Sc.) program who shows qualities of leadership and is worthy of financial encouragement to complete her program.

FREDERICA CAMPBELL MACFARLANE PRIZE. — $100, donated by the Quebec Women's Institute in memory of the late Frederica Campbell Macfarlane, graduate in Institution Administration, 1912, Superintendent of the Quebec Women's Institute from 1913 to 1919. Open only to students from a rural district of the Province of Quebec, and awarded on the results of the final examinations in any year of the B.Sc. (F.Sc.) program.

HARRISON PRIZE. — A prize established by an endowment under the will of the late Dr. F.C. Harrison, Principal of Macdonald College from 1910 until 1926; awarded for academic excellence to a student in the graduating year of the B.Sc. (F.Sc.) program.

CLASS OF 1953 BOOK PRIZE. — Graduates of the class of 1953 (Agriculture and Food Science) have established a fund, the proceeds of which are used to provide a prize in books for the student with the highest standing in all the courses of the Second year curriculum. Awarded in the B.Sc. (Agr.) program in odd-numbered years; in the B.Sc. (F.Sc.) program in even-numbered years.

3.2.3.2 B.Sc. (Agr.) PROGRAM

MEDALS

MACDONALD MEDALS. — As a tribute to Sir William Macdonald, and in recognition of academic achievement, the late Mr. and Mrs. Walter M. Stewart of Montreal have donated two medals for annual competition, to be awarded to the students with the highest aggregate standing in the First and Second years respectively of the B.Sc. (Agr.) program.

GOVERNOR GENERAL'S MEDAL. — His Excellency the Governor General of Canada donates a medal to be awarded to the student in Agriculture who ranks highest in the graduating class.

GRAY MEDAL. — A medal and a prize of $100, in honour of Prof. P.H.H. Gray, longtime Chairman of the Department of Microbiology, to be awarded annually to the student majoring in Microbiology who has demonstrated academic excellence and the most promise in the graduating year.

HARRISON MEDAL. — A medal and a prize of $100, in honour of Principal F.C. Harrison, first Chairman of the Department of Microbiology, to be awarded annually to the student majoring in Microbiology who has demonstrated academic excellence and the most promise in the second year.

PRIZES

CHEMICAL INSTITUTE OF CANADA PRIZE. — A medal and a prize of $25 for the student in the Chemistry option with the highest standing at the end of the Second year.

EMILE A. LODS MEMORIAL PRIZE. — A prize of $100 given in memory of Emile A. Lods, M.S.A., D.Sc., F.A.I.C., and awarded to a student in the Second year of the university program majoring in Agronomy.

LOCHHEAD MEMORIAL PRIZE. — A prize established by an endowment in memory of William Lochhead, B.A., M.Sc., the first Professor of Biology at Macdonald College. It is awarded to a student whose major interest is in entomology and who has emphasized entomological and directly related courses in the undergraduate program. If there is no suitable candidate, the Chairman of the Department of Entomology and Zoology may recommend a graduate student for this prize. The prize, in value equal to the revenue from the endowment, is to be in books, selected by the winner.

CLASS OF 1953 BOOK PRIZE. — Graduates of the class of 1953 (Agriculture and Household Science) have established a fund, the proceeds of which are used to provide a prize in books for the student with the highest standing in all the courses of the Second year curriculum. The prize will be awarded in the B.Sc. (Agr.) program in odd-numbered years; in the B.Sc. (F.Sc.) program in even-numbered years.

CUTLER SHIELD. — The late Professor Garnet H. Cutler, the first lecturer in Cereal Husbandry, Macdonald College, has donated a bronze challenge shield which is held for one year by the student majoring in Agronomy with the highest aggregate in the final year.

CANADIAN SOCIETY OF ANIMAL PRODUCTION BOOK PRIZE. — Awarded to the student in the final year for academic excellence in Animal Science, Nutrition or Food Science.

RAYMOND L. CONKLIN PRIZE. — A prize in the amount of the yearly interest from an endowment established by Raymond L. Conklin, D.V.M.. To be awarded to a student in the First or Second years who has achieved high academic standing.

THE RICHARD LEVESQUE MEMORIAL PRIZE. — Value $100, to be awarded to a student entering his final undergraduate year of a B.Sc. (Agr.) program. To qualify, students should have high academic standing and preference is given to a student who is active in the campus sports program and participates in student organizations.

THE JUTRAS AND KOHEN INC. PRIZE IN AGRICULTURAL ENGINEERING. — A prize of $500 awarded each year to a student who registers in the second last or last year of the Agricultural Engineering Major. In selecting the winning student, consideration will be given to high academic standing, participation in extra-curricular activities, and interest in the agricultural drainage or agricultural machinery industries.

JEFF MILLS MEMORIAL PRIZE: Value $250, awarded to a deserving student entering 2nd or 3rd Year in the Faculty of Agriculture. Jeff Mills was killed tragically at the age of 25. He was an outstanding athlete and student at the Macdonald Campus. He had a multitude of friends who respected his individuality and capability of accomplishment by concentrated effort.The Prize will be given to a student possessing similar characteristics.

LYNDEN LAIRD LYSTER MEMORIAL AWARDS IN PARASITOLOGY. — A Scholarship/Bursary award is available to an undergraduate student for excellence in Parasitology. Apply to the Director of the Institute of Parasitology.

3.2.4 Loans — General Information

A loan is a form of financial aid to supplement a student's resources (where his earnings potential justifies the prospect of reasonably early repayment). An academic record of at least a C average (G.P.A. of 2.0) is required as a condition of eligibility. In general, loans are available only to Canadian students or students with landed immigrant status, and as a general rule not to freshmen students.

Students applying for loans from funds available at the university are required first to apply for Government aid through their home province and otherwise demonstrate that they have exhausted all their possible sources of help, e.g. family, etc.

Students who have financial problems and are unable to pay the full amount of fees due at registration and who are not assured of sufficient funds to pay the second instalment due in January should apply for loan assistance before registration, in order to assure themselves of funds to complete the year. In any case loan applications in the Faculty of Agriculture must be made before September 30, to the Registrar's Office. Applications made after this date will not be considered, except in cases of emergency.

The Registrar's Office will supply application forms for loans from Quebec or Ontario governments, to students who did not apply directly before registration. Application forms should be completed by the students, with requested documentation attached, and handed back to the Registrar's Office. 'Institution Section' will be completed and sealed by the Registrar's Office and the document mailed directly to the appropriate government office.

LOAN FUND OF THE MACDONALD BRANCH OF THE McGILL GRADUATES' SOCIETY. — Through the generosity of the graduates of Macdonald College, loan funds have been made available for deserving students. Students who have a G.P.A. of at least 2.4 in their previous year's work will be eligible for loans of up to $500 per year.

The Graduates' Society Loan Funds bear interest at the rate of 4½%, and are limited to Canadian citizens. Applications are to be made to the Registrar's Office.

KIWANIS CLUB OF MONTREAL STUDENT LOAN FUND. — An interest-bearing loan fund for students in Agriculture at Macdonald College established to assist worthy students who are in need of financial help to further their education. Open to students contemplating entering the College as well as by students already enrolled. The loans are to be repaid, in whole or by instalments, as soon as the recipient is able to do so. Except in special cases the maximum loan is $500. Application for a Kiwanis Club loan is to be made to the Registrar's Office, Macdonald College.

3.3 DIPLOMA PROGRAM

3.3.1 Scholarships

MACDONALD BRANCH OF THE McGILL GRADUATES SOCIETY SCHOLARSHIPS. — Two scholarships of $500 each available to students admitted to the Faculty of Agriculture in the program leading to a Diploma in Agriculture. Each applicant will be considered on his or her own merits, taking into account all or any of the following: academic achievement, participation in athletics, student affairs activities or community service projects. Applications must be submitted prior to August 1 each year.

3.3.2 Bursaries

QUEBEC LANDSCAPE GARDENERS' AND NURSERYMEN'S ASSOCIATION BURSARY. — A bursary of $300 to be awarded to a student entering the Second Year of the Diploma Program who is interested in pursuing a career in ornamental horticultural work. Applicants must apply in writing to the Director of the Diploma Program before September 1, indicating study and career interests. The bursary will be awarded on academic performance, extracurricular activities, financial need and interest in a career in Horticulture.

QUEBEC WOMEN'S INSTITUTE BURSARY. — $100 for the student entering the Second year of the Diploma Program, who: (1) is a professional farmer's son (or daughter) from the Province of Quebec, (2) has spent at least one season (seed time to harvest) in his or her father's employ on the farm, (3) intends to return to his or her father's farm for at least one year on completion of the course or to manage his or her own farm, (4) and who, if more, than one candidate meets the above three requirements, takes the highest proficiency in agricultural subjects in the First year or, if he or she is the only candidate, obtains at least Class II standing in these subjects.

If no student can qualify for the above, this bursary will be made available as an entrance bursary to the First year of the Diploma program.

ELLIN BEIT-SPEYER BURSARY. — Miss Ellin Beit-Speyer, of Springmount Jersey Farm, Massawippi, Que., provides a bursary of $200 to a student in the First or Second year of the Diploma Course.

Participation in Club activities, farm background and need will be considered in making the award. Apply to the Registrar's Office before September 1.

FISHER TRUST FUND and THE COLONIZATION SOCIETIES REGIONAL BURSARIES, described in the section for degree programs, are also applicable to Diploma students.

3.3.3 Medals

MINISTER OF AGRICULTURE OF QUEBEC MEDALS. — The Honourable Minister of Agriculture for the Province of Quebec offers annually a gold and a silver medal to the Diploma in Agriculture students ranking first and second respectively in the graduating class.

3.3.4 Prizes

THE RALSTON-PURINA DIPLOMA PROJECT PRIZE. — A prize of $50 is given annually by Ralston-Purina of Canada Limited for the best project submitted by a student registered in the Diploma Project Course.

3.4 GRADUATE SCHOLARSHIPS AND FELLOWSHIPS

Financial assistance is available for graduate students in the form of fellowships, teaching and research assistantships. Application is made to the Faculty of Graduate Studies and Research, McGill University, on forms obtained from that Faculty. The deadline for Fellowships and Scholarships is February 1.

Graduate students should refer to the McGill Announcement of Postgraduate Awards, Fellowships and Bursaries, available from the Registrar's Office, McGill University, or from the Registrar, Macdonald College, Quebec, H0A 1C0.

THE WALTER M. STEWART AWARDS IN AGRICULTURE. — Awards totaling $4,000 from a fund established by the late Walter M. Stewart. To be awarded annually to students studying at the postgraduate level at Macdonald Campus. Preference will be given to graduates from Quebec Universities. If there is no suitable candidate at the postgraduate level in a particular year the $4,000 will be awarded to undergraduate students in the Faculty of Agriculture who have achieved high academic standing.

DEPARTMENT OF EDUCATION POSTGRADUATE SCHOLARSHIPS. — Scholarships for predoctoral (postgraduate) studies and for work leading to

higher degrees in artistic, scientific or technical training are awarded for one year at a time to residents in the Province of Quebec. The number of scholarships is determined by a jury. Candidates wishing to take part must obtain the application form from: Direction générale de l'enseignement supérieur, Ministère de l'Education, 1035 rue de la Chevrotière, Québec, Qué. G1R 5A5.

THE SIR VINCENT MEREDITH FELLOWSHIP IN AGRICULTURAL ECONOMICS. — The Fellowship valued at $2,500 per year is tenable for a two-year period. The fellow must qualify for admission to graduate work in Economics at the Ph.D. level as set out in the Announcement of the Faculty of Graduate Studies and Research of McGill University, and will be required to pursue research or thesis work on an approved subject in the area of Agricultural Economics. Limited teaching or other duties attach to the tenure of this Fellowship. Inquiries and applications should be addressed to the Department of Agricultural Economics, Macdonald College, prior to March 15.

LYNDEN LAIRD LYSTER MEMORIAL AWARD in PARASITOLOGY — An award of $3,000 to an outstanding post-graduate student in Parasitology. Apply to the Director of the Institute of Parasitology.

OTHER GRADUATE FELLOWSHIPS. — A number of Graduate Fellowships are available to students entering the Faculty of Graduate Studies and Research. These have a fixed value of $1,200 for ten months plus tuition fees. Further particulars may be obtained from the Fellowships Office of the Faculty of Graduate Studies and Research, McGill University.

4 ACADEMIC PROGRAMS & CURRICULUM

4.1 PROGRAMS

The programs in the Faculty of Agriculture and the School of Food Science are normally of three years' duration following the completion of a 2 year post-secondary Collegial program (CEGEP) in the Pure and Applied Sciences or the Health Sciences or its equivalent

Courses	Pure and Applied Sciences (terms)	Health Sciences (terms)
English or French	4	4
Humanities	4	4
Mathematics	4	3
Physics	3	3
Chemistry	2	4
Biology	1	2
Electives	6	4

PROGRAMS IN AGRICULTURE

Bachelor of Science in Agriculture (B.Sc. (Agr.))

A three-year program from the Diploma of Collegial Studies leading to professional qualification in Agricultural Science or in one of its related specialized branches in the Biological Sciences and Renewable Resources.

Bachelor of Science in Agricultural Engineering (B.Sc. (Agr.Eng.))

A three-year program from the Diploma of Collegial Studies in Pure and Applied Sciences leading to professional qualifications in Agricultural Engineering.

Diploma in Agriculture

A two-year program in practical agriculture designed to prepare students for careers in farming or work closely associated with agriculture at the production level.

Postgraduate Programs in Agricultural Science

These lead to the degrees of Master of Science and Doctor of Philosophy, with study and research in one or more of the departments of the Faculty or the School of Food Science. The program of studies and examinations are controlled by the Faculty of Graduate Studies and Research.

PROGRAMS IN FOOD SCIENCE

Bachelor of Science in Food Science (B.Sc. (F.Sc.))

A three-year program from the Diploma of Collegial Studies leading to the professional qualifications necessary for Dietetics and Food Science, as well as the following disciplines in the Food and Consumer Sciences area: Food Chemistry, Nutrition, Hospitality Management; Food Management; Home Economics Education, and Consumer Services.

NOTE 1. Students with a CEGEP diploma in Social Sciences with Chemistry, Pure and Applied or Health Sciences may enter the Home Economics Education program which qualifies for the B.Ed. degree majoring in Home Economics.

NOTE 2. Students wishing to enter the Hospitality Management program which qualifies them for the B.Com. degree must meet the requirements for entry into the Faculty of Management. Elective courses in Chemistry and Biology are highly recommended.

4.2 GENERAL ENTRANCE REQUIREMENTS

All candidates for admission must furnish medical certificate of physical health on forms supplied by the College.

Applications for admission from Canadian students should be received before August 1st of the

calendar year in which they are to be considered for acceptance and must be accompanied by a non-refundable fee of $15.00 in Canadian funds payable by certified cheque or money order payable to Macdonald College.

NON-CANADIAN STUDENTS

Applications for admission from students whose homes are outside Canada must be received before March 1 of any year if they are to be considered for acceptance for that calendar year and must also be accompanied by the application fee of $15.00. No decision on these applications will be made by the Committee on Admissions before March 1, and the applicant will be notified whether or not his application is accepted as soon after that data as possible.

CLASSES OF STUDENTS

Full-Time Students

Full-time students in Satisfactory standing take a minimum of 12 credits per term.

Full-time students in Probationary standing take between 10 and 12 credits per term, and may add to this load a repeated course in which a grade of "D" was originally obtained.

Part-time Students

Part-time students carry fewer than 12 credits per term (fewer than 10 credits per term for students in Probationary standing). New students apply through the Registrar's Office and the applicant must have the qualifications to enter a full-time program. Full-time students who wish to become part-time must consult the Office of the Associate Dean. Certain programs must be completed within a specified number of years; such information is available from the Associate Dean.

Special Students

A special student takes regular credit courses, but is not working towards a degree. To qualify for this status a student must hold an undergraduate degree and have a specific approved plan of study. Applications must be made at the Office of the Associate Dean.

Visiting Students

A visiting student is one who is taking courses at McGill for credit at another university. Applications must be made at the Office of the Associate Dean.

4.3 ACADEMIC STANDING — B.Sc. (Agr.), B.Sc. (Agr. Eng.) and B.Sc. (F. Sc.)

All students are required to give satisfactory evidence of mastery of the material of lecture and laboratory. Examinations are normally held at the end of each course but other methods of evaluation may also be used. The grade assigned for a course represents the standing of the student in all the work of the course.

Examinations may be written in either of the two official languages of Canada.

Upon payment of a fee of $10.00 a student may apply to the office of the Dean of the Faculty to have an examination re-read.

CREDIT SYSTEM

All courses carry a credit value. In general, a three credit course indicates three hours of lectures (which may or may not include laboratory periods, conference, etc.) per week for one term. Courses are graded by letter. Ratings of 4, 3, 2, 1, and 0 are attached to the letter grades of A, B, C, D, and F, respectively. The letter grade F is a failure. The letter grade only appears on the transcript.

The grade points for each course are calculated by multiplying the credit value of the course by the student's earned grade rating. Standing in each term will be determined on the basis of a grade point average (GPA) computed by dividing the sum of the grade points earned for the term by the total course credits attempted.

The cumulative grade point average (CGPA) will be the grade point average calculated using the student's entire record in a degree program. A failed course will continue to be used in the calculation of the CGPA even after the course is repeated and passed, or if a supplemental examination is taken.

ACADEMIC CREDIT TRANSFER

Exemption may be obtained for a course taken and passed at another university, upon approval of the instructor concerned. No grade will be recorded but the credit value established by the Faculty will be granted.

Full time students may, with the written permission of the Dean of the Faculty, register for up to 40% of a full course load in each semester at any university in the province of Quebec. These courses, successfully completed according to the standards of the university giving the course, will be recognized for the purpose of the degree. Further details are found in the section entitled "Academic Credit Transfer Agreement" in the *General Announcement.*

STANDING

The program for the degree will normally be completed in 3 academic years or 6 semesters. For the purpose of student classification, the years will be termed U1, U2 and U3.

Year I, 0-29 completed credits at initial registration

Year 2, at least 30-59 completed credits at registration

Year 3, at least 60 credits at registration

A student's academic standing is based on his CGPA which is calculated on the courses taken

while registered as a full-time or part-time undergraduate in a degree program. If the CGPA drops below 2.00, the student is in academic difficulty.

STUDENTS IN ACADEMIC DIFFICULTY

1. When a student's CGPA (or SGPA in the first term of his program) drops below 2.00, he is advised to withdraw. If he chooses to reregister, he is on probation until he raises his CGPA to 2.00.
2. A student on probation is advised to register for not more than 12 credits per term. He is not permitted to be on probation for more than one term unless he obtains a SGPA of 2.50 or higher.
3. A student who does not raise his CGPA to 2.00 (or obtain a SGPA of 2.50) while on probation is not permitted to register. He is required to withdraw from the degree program for at least one term. If after this, the student wishes to be readmitted he must apply in writing to the Committee on Academic Standing.

SUPPLEMENTAL EXAMINATIONS

A student who has failed a course may either reregister for and repeat the course, or he may apply to write one supplemental examination and will receive the grade earned. If a student applies to write a supplemental examination and does not write, he gets an "F" unless he has informed the Registrar in writing at least one week in advance that he does not intend to write. In the case of an elective course, the student may substitute another elective. Supplemental privileges or reregistration are available for students who wish to upgrade a course in which a grade of D has been obtained.

Supplemental examinations may be written at the June supplemental period or at the next regular final examination period, i.e. December for first term courses and April for second term courses. In addition, by arrangement with the instructor, an examination may be made available at the end of a term in which there is no regular end of term examination in that course.

A student may register only twice in any course.

DEGREE REQUIREMENTS

To be eligible for a degree a student must have passed all required courses and also any specified electives recommended by his major professor. He must have accumulated at least 90 credits (B.Sc.) (Agr.) and B.Sc. (F.Sc.) or 96 credits (B.Sc.) (Agr. Eng.) of which at least 45 credits must be taken at McGill University and have a CGPA of at least 2.00.

ACADEMIC ADVISERS

Before registration, every student entering the Faculty must select a major program of study. He must consult with the Major professor of his chosen program for the selection and time-tabling of required and elective courses. The Major professor will continue to act as his adviser during his studies in the Faculty.

4.4 ATTENDANCE AND CONDUCT IN CLASSES

Matters of discipline connected with or arising from the general arrangement for teaching are under the jurisdiction of the Dean of the Faculty or Director of the School concerned.

Students may be admonished by a professor or instructor for dishonest or improper conduct or may be reported to the Dean or Director concerned for disciplinary action.

Punctual attendance at all classes, laboratory periods, tests, etc., is expected of all students. Absences can only be excused on the ground of necessity or illness, of which proof may be required. Special attention is called to the fact that the completion of all laboratory work is obligatory and the opportunity to make up work missed can only be provided in the case of properly excused absences.

The Faculty has the power to refuse examinations to those students who persist in absenting themselves from classes without permission.

Students are requested not to make application for additional leave either before or after holiday periods, as such leaves can only be granted in case of illness or other exceptional circumstances.

4.5 CURRICULA

CURRICULA FOR THE B.Sc. (Agr.) IN AGRICULTURAL SCIENCES

Programs leading to professional qualification in agricultural science with specialization in Agricultural Economics, Animal Science, Plant Science, Soil Science and General Agricultural Science.
Prof. S.P. Touchburn, Coordinator

Agricultural Economics Major

The curriculum constitutes a comprehensive and systematic program in the application of economics and management to problem—solving in the agricultural—food system and related resource systems. The complete package would serve to equip the student for decision making both within the firm and in top management, if not on graduation then after a few years experience. Qualified graduates are in demand at all levels within the private business, and public service sectors of the Canadian Economy.
Professor Gordon A. MacEachern, Major Professor

Required courses, 41 credits

COURSE NUMBER	SUBJECT	CREDITS
330-211B	Principles of Plant Science	3
334-200A	Principles of Economics I	3
334-201B	Principles of Economics II	3
334-231B	Economics of Agriculture	3
334-430B	Agriculture, Food and Resource Policy	3
334-435A	Agriculture Economic Research Methods and Special Problems	3
334-442B	Economics of Food Systems Development	3
342-250A	Principles of Animal Science	2
360-201A, B	Statistical Methods I	3
372-210A	Principles of Soil Science	3
Two of the following three courses:		
334-230B	Economics of Marketing	3
334-332A	Farm Production Economics	3
334-333B	Resource Economics	
And two of the following three courses:		
334-410A	Land and Resource Appraisal	3
334-440A	Advanced Agriculture and Food Marketing	3
334-450B	Agri-Business Management	—
		41

Elective Courses

To be selected in consultation with major professor with emphasis on courses in the agricultural sciences. A total of 90 credits necessary to meet the requirements for the degree.

Animal Science Major

The curriculum in Animal Science involves intensive training in both the basic and applied biological sciences as related to domestic animals. Concentration in either Animal Genetics, Nutrition or Physiology is possible within the Animal Science major. Graduates are professionally qualified and generally enter agricultural industries, mainly sales and marketing, government service (Provincial or Federal), extension, teaching or post-graduate studies. Students in the Animal Science major may apply for entrance to the pre-veterinary semester at the Ontario Veterinary College.

Prof. R. B. Buckland, Major Professor

Required courses, 56 credits

COURSE NUMBER	SUBJECT	CREDITS
372-210A	Principles of Soil Sciences	3
*330-211B	Principles of Plant Science	2
342-250A	Principles of Animal Science	2
356-201A	Introduction to Genetics	3
332-212A	Biochemistry laboratory	2
332-211A	Biochemistry 1	2
360-201A, B	Statistical Methods I	3
344-202B	Cellular Biology	3
332-234B	Biochemistry II	3
342-330A	Fundamentals of Nutrition	3
342-323A	Mammalian Physiology	4
342-312B	Animal Pathology	3
342-301B	Principles of Animal Breeding	3
342-332B	Applied Animal Nutrition	3
342-450A or 342-452A	Dairy Production or Beef Production	3
342-454B or 342-456B	Non-Ruminant Production	3
376-340A	Chemistry of Food Products I	3
342-495D	Seminar	2
	Two Economics courses	6
		—
		56

**Students with a particular interest in the area of Agronomy may take any 2 of the following courses. (340-331A, 340-332B, 340-333A, 340-439A) in place of 330-211B.*

Elective courses: 34 credits selected in consultation with major professor.

General Agricultural Sciences Major

The curriculum is designed to provide a general scientific and applied background for modern agriculture without the requirements of a specialized program and to develop an appreciation of applied agriculture in its on-farm environment. Graduates may be employed in agri-business, agricultural extension and communications, sales and marketing, teaching or farm management.
Prof. B. B. Bible, Major Professor

Required courses, 24 credits

COURSE NUMBER	SUBJECT	CREDITS
342-250A	Principles of Animal Science	2
334-231B	Economics of Agriculture	3
360-201A, B	Statistical Methods I	3
330-211B	Principles of Plant Science	2
372-210A	Principles of Soil Science	3
330-495D	Seminar and Assignment	2
348-330A	Technical and Research Writing	3
352-300A	Communication — Extension Methods	3
338-201A	Introductory Meteorology	3
		24

Elective courses

Primary electives: A minimum of 30 credits from the list below, chosen in consultation with the major professor.

COURSE NUMBER	SUBJECT	CREDITS
336-215B	Principles of Hydrology	3
336-214L	Surveying	2
336-412A	Agricultural Machinery	3
340-331A	Cereal Crops	3
340-333A	Forage Crops	3
340-439A	Field Management	3
342-301B	Principles of Animal Breeding	3
342-323A	Mammalian Physiology	4
342-332B	Applied Animal Nutrition	3
344-202B	Cellular Biology	3
344-205B	Principles of Ecology	3
346-353A	Plant Physiology	4
334-230B	Economics of Marketing	3
334-332A	Farm Production Economics	3
352-301B	Community Development	3
356-201A	Introduction to Genetics	3
358-430A	Vegetable Physiology I	3
358-443A	Storage and Handling of Horticultural Crops	3
360-203A	Digital Computing I	3
362-230B	The Microbial World	3
366-402A	General Plant Pathology	3
375-200B	Conservation	3
375-401A	Fisheries and Wildlife Management	4
370-360B	Rural Sociology	3
372-310B	Soil Chemistry & Fertility	3
372-321A	Principles of Soil Rating	3
372-325B	Principles of Land Planning	2
372-333A	Phys. & Biol. Aspects of Pollution I	3
374-200B	Forest Resources	3

Free electives: to meet the minimum requirement of 90 credits for the degree.

Plant Science Major

The curriculum in the Plant Science Major involves intensive training in both the basic and applied biological sciences as related to plant science. Concentration in either agronomy, horticulture or plant protection is possible. Graduates are professionally qualified and generally enter agricultural industries, Provincial or Federal Government services, extension, teaching or post-graduate studies.
Prof. G. Gendron, Major Professor

Required courses, 37 credits

COURSE NUMBER	SUBJECT	CREDITS
342-250A	Principles of Animal Science	2
344-202B	Cellular Biology	3
346-252B	Plant Anatomy and Histology	2
346-256A	Systematic Botany	4
346-353A	Plant Physiology	4
346-451A	Plant Ecology	3
332-212A	Biochemistry laboratory	2
332-211A	Biochemistry 1	2
334-231B	Economics of Agriculture	3
356-201A	Introduction to Genetics	3
360-201A, B	Statistical Methods I	3
366-402A	General Plant Pathology	3
372-210A	Principles of Soil Science	3
		37

Agronomy Orientation

Additional required courses, 15 credits

COURSE NUMBER	SUBJECT	CREDITS
340-331A	Cereal Crops	3
340-333A	Forage Crops	3
340-439A	Field Management	3
340-490D	Project	3
372-310B	Soil Chemistry and Fertility	3
		15

Elective courses:

Primary electives: a minimum of 17 credits selected from the following list, chosen in consultation with the major professor.

COURSE NUMBER	SUBJECT	CREDITS
177-670A	Cytology	3
177-671B	Cytogenetics	3
338-201A	Introductory Meteorology	3
340-332B	Industrial Crops	3
340-350C	Experimental Methods in Agronomy	2
340-434A	Weed Biology and Control	3
340-435B	Plant Breeding	3
340-436B	Crop Adaptation and Distribution	3
340-440B	Seed Development, Production and Analysis	3
342-332B	Applied Animal Nutrition	3
350-330A	General Entomology	3
352-300A	Extension Methods	3
356-202B	Advanced Genetics	3
362-230B	The Microbial World	3

Horticulture Orientation

Additional required courses, 31 credits

COURSE NUMBER	SUBJECT	CREDITS
336-214L	Surveying	2
358-332D	Landscape Architecture	3

358-335B	Floriculture	3
358-338A	Pomology I	3
358-339B	Pomology II	3
358-430A	Vegetable Physiology I	3
358-431B	Vegetable Physiology II	3
358-443A	Storage and Handling of Horticultural Crops	3
358-444B	Fruit and Vegetable Processing	3
358-495D	Seminar	3
362-230B	Microbial World	2
		3
		31

Elective courses:

Primary electives: a minimum of 12 credits selected from the following list, chosen in consultation with the major professor.

COURSE NUMBER	SUBJECT	CREDITS
338-201A	Introductory Meteorology	3
338-301B	Biothermodynamics	3
340-435B	Plant Breeding	3
340-439A	Field Management	3
350-330A	General Entomology	3
340-436B	Crop Adaptation and Distribution	3
356-202B	Advanced Genetics	3
366-404B	Diseases of Horticultural Crops	3
372-310B	Soil Chemistry and Fertility	3

Free electives: to meet the minimum requirement of 90 credits for the degree.

Plant Protection Orientation

Additional required courses, 20 credits.

COURSE NUMBER	SUBJECT	CREDITS
350-452A	Economic Entomology I	3
350-453B	Economic Entomology II	3
362-230B	The Microbial World	3
366-301B	Introductory Mycology	3
366-405A	Intermediate Mycology	3
366-496D	Seminar	2
	Either	
366-403B	Diseases of Field and Forest Crops	3
	or	
366-404B	Diseases of Horticultural Crops	3
		20

Elective courses:

Primary electives: the student is advised to consider the following courses:

COURSE NUMBER	SUBJECT	CREDITS
338-201A	Introductory Meteorology	3
340-434A	Weed Biology and Control	3
340-436B	Crop Adaptation and Distribution	3
340-439A	Field Management	3
356-202B	Advanced Genetics	3
358-443A	Storage and Handling of Horticultural Crops	3
362-442A	Food Microbiology and Sanitation	3
366-490D	Project	3
372-310B	Soil Chemistry and Fertility	3

Free electives: to meet the minimum requirements of 90 credits for the degree.
NOTE: Students taking the Plant Science Major may not take 330-211A — Principles of Plant Science for credit.

Soil Science Major

The soil science major provides a program of specialization in soil science combined with application to an area of soils use such as soil fertility and crop growth (soils and crops orientation), or conservation of soil and water (soil conservation orientation). Students planning graduate study and a career in research should choose the soil research orientation.
Prof. A. F. Mackenzie, Major Professor

Required courses, 36 credits

COURSE NUMBER	SUBJECT	CREDITS
372-210A	Principles of Soil Science	3
372-250A	Geology and Geomorphology	3
372-310B	Soil Chemistry and Fertility	3
372-330B	Physical Properties of Soils	3
372-420A	Soil Survey	3
372-491A	Project I	3
372-493B	Project II	3
372-496D	Seminar	2
362-331B	Microbial Ecology	3
330-211B	Principles of Plant Science	2
342-250A	Principles of Animal Science	2
334-231B	Economics of Agriculture	3
360-201A, B	Statistical Methods I	3
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General Soil Science Orientation

Primary electives: 39 credits selected from an approved list in consultation with the major professor.
Free electives: to meet the minimum requirement of 90 credits for the degree.

Soils and Crops Orientation

Primary electives: 33 credits selected from an approved list in consultation with the major professor.
Free electives: to meet the minimum requirement of 90 credits for the degree.

Soil Conservation Orientation

Primary electives: 24 credits selected from an approved list in consultation with the major professor.
Free electives to meet the minimum requirement of 90 credits for the degree.

Soil Research Orientation

Primary electives: 21 credits selected from an approved list in consultation with the major professor.
Free electives to meet the minimum requirement of 90 credits for the degree.

CURRICULUM FOR THE B.Sc. (Agricultural Engineering)

The curriculum integrates the fundamentals common to all branches of engineering with the agricultural and biological sciences. It allows students to proceed from an understanding of why and how certain conditions affect plants and animals to the design of systems that enhance the condition of the environment and improve food handling and processing methods.

Prof. R. S. Broughton, Major Professor

Required courses, 61 to 65 credits

COURSE NUMBER	SUBJECT	CREDITS
336-210A	Mechanics I	4
336-211B	Mechanics II	4
336-216B	Materials Science	3
336-312A	Circuit Analysis and Electric Machines	3
336-341B	Strength of Materials	4
336-490D	Project	3
372-210A	Principles of Soil Science	3
360-202A	Calculus	3
360-207A	Linear Algebra	3
360-205B	Differential Equations	3
360-201A, B	Statistical Methods I	3
360-203A	Digital Computing I	3
305-240A	Thermodynamics	3
305-346A	Heat Transfer	3
	or	
302-311A	Heat Transfer	3
303-321A	Fluid Mechanics	4
	or	
305-330A	Fluid Mechanics	3
	or	
336-305B	Fluid Mechanics	4
336-418B	Soil Mechanics and Foundations	4
	An Animal Science Course	3
	An Agronomy or Horticulture Course	2 or 3
	An Economics Course	2 or 3
		3
		61 65

Electives selected in consulation with major professor.

A. Advanced Agricultural Engineering — 20 or more credits from:

COURSE NUMBER	SUBJECT	CREDITS
336-214L	Surveying	2
336-215B	Principles of Hydrology	3
336-314A	Agricultural Structures	3
336-315B	Machine Design	4
336-320A	Systems for Processing Food Products	3
336-321B	Unit Operations in Food Processing	3
336-322B	Food Production and Processing Waste Management	3
336-323A	Physical Properties of Biological Materials	3
336-324B	Industrial Processes in the Food Industry	3
336-410B	Instrumentation and Control	3
336-411B	Off-Road Power Machinery	3
336-412A	Agricultural Machinery	3
336-413B	Materials Handling Systems	3
336-416B	Engineering for Land Development	3
336-419B	Structural Design	3

In special cases graduate level courses may be taken.

B. Other courses from Faculties of Agriculture or Engineering to round out the student's program and meet the requirement of a minimum of 96 credits for the degree.

CURRICULA FOR THE B.Sc. (Agr.) DEGREE IN BIOLOGICAL SCIENCES

This area of specialization covers many aspects of biology and gives first, a training in fundamentals of science and second, an opportunity to develop specialization. All students are required to take certain 'core' courses followed by required and elective courses related to the chosen specialty to meet a credit total of 90. The aim of the program is to develop expertise in applications of biology based on fundamental aspects.
Professor D. W. Woodland, Coordinator

Core Courses Required for all major areas of specialization. (22 credits)

COURSE NUMBER	SUBJECT	CREDITS
332-211A	Biochemistry I	2
332-212A	Biochemistry laboratory	2
344-200A	Biology of Organisms I	3
344-201B	Biology of Organisms II	3
344-202B	Cellular Biology	3
344-205B	Principles of Ecology	3
360-201A, B	Statistical Methods I	3
356-201A	Introduction to Genetics	3
	Total	22

Botanical Sciences Major

Botanical Sciences offers foundation courses for those who like to work with green plants or fungi. This is the option for anyone planning a career in some aspect of Botany, Mycology or Plant Pathology.
Prof. R. H. Estey, Major Professor

Required courses, 37 credits

COURSE NUMBER	SUBJECT	CREDITS
	Core Courses	22
346-252B	Plant Anatomy and Histology	2
346-256A	Systematic Botany	4
346-353A	Plant Physiology	4
366-490D	Project	3
366-496D	Seminar	2
		37

Elective courses: At least 24 credits selected from the following list in consultation with the major professor.

COURSE NUMBER	SUBJECT	CREDITS
344-306B	Biological Instrumentation	3
346-251A	Plant Histological and Cytological Methods	3
346-454B	Plant Morphology	3
346-355A, B	Special Topic in Botanical Sciences	2
346-451A	Plant Ecology	3
356-202B	Advanced Genetics	3
362-230B	The Microbial World	3
362-331B	Microbial Ecology	3
366-301B	Introductory Mycology	3
366-355A, B	Special Topic in Plant Pathology	2
366-402A	General Plant Pathology	3
366-403B	Diseases of Field and Forest Crops	3
366-404B	Diseases of Horticultural Crops	3
366-405A	Intermediate Mycology	3

Free electives: to meet the minimum requirements of 90 credits for the degree.

Environmental Biology Major

This program aims at training scientists with basic knowledge in Biology and strong emphasis in Ecology. As ecologists they will be best equipped to investigate the scientific aspects of the relationships between organisms and their environment and they will be less oriented towards the political and sociological components of the ecosystem.
Prof. R. K. Stewart, Major Professor

Biological Orientation

Required courses, 30 credits

COURSE NUMBER	SUBJECT	CREDITS
	Core courses	22
344-495D	Seminar	2
360-203A	Digital Computing I	3
	Project (in an appropriate department)	3
		30

Elective courses: A minimum of 30 credits selected from the following list in consultation with the major professor.

COURSE NUMBER	SUBJECT	CREDITS
338-201A	Introductory Meteorology	3
346-256A	Systematic Botany	4
346-451A	Plant Ecology	3
349-307A	Natural History of the Vertebrates	3
349-310A	Comparative Ethology	3
349-312A	Principles of Systematic Zoology I	3
349-315A	Biology of Inland Waters I	3
349-316B	Biology of Inland Waters II	3
349-418A	Terrestrial Animal Ecology I	3
349-419B	Terrestrial Animal Ecology II	3
350-444B	Soil Fauna Ecology	3
360-206A	Mathematical Methods in Ecology	3
360-610A	Statistics Methods II	3
362-230B	The Microbial World	3
336-215B	Principles of Hydrology	3
372-210A	Principles of Soil Science	3
375-401A	Fisheries and Wildlife Management	3
375-410B	Wildlife Ecology	4
	An appropriate Physiology Course	3

Free electives: To meet the minimum requirements of 90 credits for the degree.

Prof. R. H. Douglas, Major Professor

Physical Orientation

Required courses, 45 credits

COURSE NUMBER	SUBJECT	CREDITS
	Core Courses	22
332-339A	Introductory Physical Chemistry	3
338-201A	Introductory Meteorology	3
338-301B	Biothermodynamics	3
344-495D	Environmental Biology Seminar	2
360-202A	Calculus	3
360-203A	Digital Computing I	3
372-210A	Principles of Soil Science	3
	Project (in an appropriate Department)	3
		45

Elective courses: A minimum of 24 credits from the following list in consultation with the major professor

COURSE NUMBER	SUBJECT	CREDITS
332-222B	Analytical Chemistry I	3
336-215B	Principles of Hydrology	3
338-303A	Principles of Atomic and Nuclear Physics	3
338-304B	Physical Basis of Climate	3
338-308B	Biometeorology	3
338-404B	Radiation Biophysics	3
346-451A	Plant Ecology	3
360-207A	Linear Algebra and Vector Analysis	4
360-205B	Differential Equations	3
360-206A	Mathematical Methods in Ecology	3

360-610A	Statistics Methods II	3
362-230B	Microbial World	3
372-330B	Physical Properties of Soils	3
375-410B	Wildlife Ecology	3
	An instrumentation course	
	An appropriate physiology course	

Free electives: To meet the minimum requirements of 90 credits for the degree.

Microbiology Major

Students receive training in fundamental principles and applied aspects of Microbiology. Successful graduates are competent to work in government and industrial research laboratories and in the pharmaceutical, fermentation and food industries.

Prof. R. A. MacLeod, Major Professor

Required courses, 43 credits

COURSE NUMBER	SUBJECT	CREDITS
	Core Courses	22
344-306B	Biological Instrumentation	3
362-200A	Laboratory Methods in Microbiology	3
362-230B	The Microbial World	3
362-338B	Physiology of Microorganisms	3
362-437D	Frontiers in Microbiology	3
362-492D	Project	1
362-495D	Seminar	5
		3
		43

Elective courses: A minimum of 24 credits selected from the following list in consultation with the major professor.

332-222B	Introductory Analytical Chemistry	3
332-230A*	Organic Chemistry I	3
332-324A	Quantitative Inorganic Analysis	3
338-301B	Biothermodynamics	3
360-202A	Calculus	3
362-331B	Microbial Ecology	3
362-341A	Mechanisms of Pathogenicity	3
362-438A	Immunology	3
362-442A	Food Microbiology and Sanitation	3
366-301B	Introductory Mycology	3
366-406A	Virology	3

Free electives: To meet the minimum requirements of 90 credits for the degree.

**Replace by another elective if already taken at CEGEP.*

Zoological Sciences Major

This program is a three-pronged one. By careful course selection the candidate may emphasize general zoology, entomology or soil and fresh water zoology. Students are given a basic background to proceed into various areas of zoological research and into professional work in entomology and applied zoology. Those who plan careers in animal taxonomy, zoological field work, pest control, etc., are especially advised to consider this area of specialization.

Prof. S. B. Hill, Major Professor

Required courses, 31 to 33 credits

COURSE NUMBER	SUBJECT	CREDITS
	Core Courses	22
349-206B	Histological Techniques in Zoology	3
349-490D		
or		
349-491D	Zoology or Entomology Project	3 or 5
349-496D	Seminar and Literature Review	3
	Total	31-33

Elective courses: A minimum of 39 credits selected in consultation with the major professor. Check the Announcement for years in which alternating courses are offered.
21 to 27 credits from the following courses in Entomology and Zoology

COURSE NUMBER	SUBJECT	CREDITS
349-203B	Invertebrate Zoology	3
349-307A	Natural History of the Vertebrates	3
349-308A	Comparative Morphology of the Vertebrates	3
349-310A	Comparative Ethology	3
349-312A	Principles of Systematic Zoology I	3
349-313B	Principles of Systematic Zoology II	3
349-315A	Biology of Inland Waters I	3
349-316B	Biology of Inland Waters II	3
349-418A	Terrestrial Animal Ecology I	3
349-419B	Terrestrial Animal Ecology II	3
349-422A	Parasitology I	3
349-423B	Parasitology II	3
350-330A	General Entomology	3
350-331A	Insect Morphology I	3
350-332B	Insect Morphology II	3
350-350B	Insect Development and Physiology	3
350-440B	Systematic Entomology	3
350-442A	Arachnida and Other Terrestrial Arthropods	3
350-444B	Soil Fauna Ecology	3
350-446B	Bees and Beekeeping	3
350-452A	Economic Entomology I	3
350-453B	Economic Entomology II	3
350-454A	Pest Insects	3

In addition:
3 to 12 credits from: Animal Science, Nutrition & Dietetics, Genetics
3 to 12 credits from: Agriculture, Agronomy, Botany, Horticulture, Microbiology, Plant Pathology
3 to 9 credits from: Renewable Resources Development, Soil Sciences, Woodland Resources
3 to 9 credits from: Chemistry, Mathematics, Physics
Free electives: To meet the minimum requirements of 90 credits for the degree.

CURRICULA FOR THE B.Sc. (Agr.) DEGREE IN RENEWABLE RESOURCES DEVELOPMENT

Students registered in any of the 5 Majors of this Group can expect to gain a comprehensive overview of renewable resources, the socio-economic implications of development and planning as well as a thorough knowledge of the basic science disciplines involved.
Professor A. R. C. Jones, Coordinator

Core of required courses for all major areas of specialization — 26-28 credits.

COURSE NUMBER	SUBJECT	CREDITS
334-200A	Principles of Economics I	3
334-333B	Resource Economics	3
344-205B	Principles of Ecology	3
352-300B	Communication — Extension Methods	3
360-201A, B	Statistical Methods I	3
370-230A	Introductory Sociology	3
375-300A	Renewable Resources	3
375-491D	Seminar	2
375-496D or 375-497D	Project I (or a project in an approved Dept. or Division)	3-5
	Project II	—
		26-28

Agricultural Land Planning and Development Major

This major prepares the student to carry out development, and to experiment with solutions of integrated resource management in terms of optimal land use under any given set of economic, social and ecological conditions.
Prof. J. F. C. Millette, Major Professor

Required courses, 46-48 credits

COURSE NUMBER	SUBJECT	CREDITS
	Core	26-28
372-210A	Principles of Soil Science	3
372-250A	Geology and Geomorphology	3
372-420A	Soil Survey	3
336-215B	Principles of Hydrology	3
338-201A	Introductory Meteorology	3
372-321A	Principles of Soil Rating	3
372-325B	Principles of Land Planning	2
		46-48

Elective courses

Primary electives: a minimum of 14 credtis selected from the following list in consultation with the major professor.

COURSE NUMBER	SUBJECT	CREDITS
336-214L	Surveying	2
336-416B	Engineering for Land Development	3
336-418B	Soil Mechanics and Foundations	3
334-410A	Land and Resource Appraisal	3
358-332D	Landscape Architecture	3
370-341A	The Urban Community	3
370-360B	Rural Sociology	3
372-330B	Physical Properties of Soils	3
374-200E	Forest Resources	3

Free electives may be selected from all courses offered on the Macdonald College Campus or on the Montreal Campus of McGill University in consultation with the major professor to meet the minimum requirement of 90 credits.

Community Resource Development Major

An interdisciplinary study of the development, use and management of natural and community resources for human needs. Integration of the physical, social, economic and institutional approaches to the development of an area's resources. Emphasis on public policy considerations affecting resource use and the attempts by citizens and government agencies to increase the economic opportunity and quality of life of communities and their surrounding regions.

Prof. M. Chevrier, Major Professor

Required Courses: 32-34 credits

COURSE NUMBER	SUBJECT	CREDITS
	Core courses (less 372-230B)	26-28
372-210A	Principles of Soil Science	3
336-215B	Principles of Hydrology	3
		32-34

Primary Electives: a minimum of 24 credits from the following courses to constitute a primary area of specialization, to be chosen by the student with the approval of the major professor.

COURSE NUMBER	SUBJECT	CREDITS
330-211B	Principles of Plant Science	2
342-250A	Principles of Animal Science	2
360-203A	Digital Computing I	3
334-231B	Economics of Agriculture	3
334-530B	Agriculture, Food and Resource Policy	3
352-301B	Community Development	3
375-333A	Physical and Biological Aspects of Pollution I	3
375-334B	Physical and Biological Aspects of Pollution II	3
370-360B	Rural Sociology	3
372-321A	Principles of Soil Rating	3
374-200B	Forest Resources	3
375-411B	Recreation Resources Management	3

330-410B	Comparative Agriculture	3
330-310B	Food for Man-Agriculture and Society	3
354-303A	Agriculture et Ressources Renouvelables dans les Pays Francophones	3
375-200B	Conservation	3

Free Electives: to meet the minimum of 90 credits for the degree

Environmental Conservation Major

This major is designed to give the student a general background in the areas of renewable natural resources -air, water, land, forests and wildlife. Not only the physical, but also the social and political ramifications of resource development are examined. Courses equip the student with the information and skills to qualify him to make informed choices and to function in a variety of resource development and management positions.
Prof. E.R. Fillmore, Major Professor

Required Courses: 35-37 credits

COURSE NUMBER	SUBJECT	CREDITS
	Core Courses (less 372-230B)	26-28
336-215B	Principles of Hydrology	3
338-201A	Introductory Meteorology	3
372-210A	Principles of Soil Science	3

Primary Electives: a minimum of 24 credits selected from the following list.

COURSE NUMBER	SUBJECT	CREDITS
330-211B	Principles of Plant Science	3
338-308B	Biometeorology	3
346-451B	Plant Ecology	3
349-315A	Biology of Inland Waters I	3
349-316B	Biology of Inland Waters II	3
352-331B	Microbial Ecology	3
356-203A	Heredity, Evolution, and Society	3
362-230B	The Microbial World	3
372-321A	Principles of Soil Rating	3
372-325B	Principles of Land Planning	2
372-420A	Soil Survey	3
374-200B	Forest Resources	3
375-200B	Conservation	3
375-333A	Physical and Biological Aspects of Pollution I	3
375-334B	Physical and Biological Aspects of Pollution I	3
375-401A	Fisheries and Wildlife Management	4
375-414A	Policy and Politics of Renewable Resource Development	3
375-437B	Assessing Environmental Impact	2

Free Electives: to meet the minimum of 90 credits for the degree.

Resource Economics and Management Major

Students in this Major will concentrate on the interaction of social and economic systems and their impact on the human environment through the emphasis on economics and management courses.
Prof. G. R. Bachman, Major Professor

Required core course, 26-28 credits

Primary electives: at least 30 credits from the following courses constitute a primary area of specialization. These are chosen by the student and approved by the major professor. Introductory courses in economics and management must be elected early in the course sequences to meet prerequisite requirements to other courses.

COURSE NUMBER	SUBJECT	CREDITS
*154-250D	Intro. Economic Theory	6
*154-302D	Money and Banking	6
*154-425D	Economics of Ecology	6
*154-317D	Economic Statistics	6
*280-221A	Behavioural Science	3
*280-222B	Behavioural Science	3

*280-330D	Elements of Marketing	6
*280-410D	Commercial Law	6
*280-300D	Management Accounting	6
*160-211D	Comparative Government	6
334-231A	Economics of Agriculture	3
*280-204A, B or 360-203A	Digital Computing I	3
360-202A	Calculus	3

Secondary electives: at least 18 credits of related courses from any area of specialization that can be related to renewable resources development, including the area of primary interest.
Free electives: to meet the minimum requirements of 90 credits for the degree.
**Offered on the McGill campus.*

Wildlife Resources Major

This Major concentrates on the biological resources emphasizing the co-development of competence in wildlife ecology and other complementary disciplines. This Major leads to work in resource planning, wildlife socio-economics, wildlife administration, wildlife management and wildlife resource evaluation.
Prof. J. R. Bider, Major Professor

Required courses, 44—46 credits

COURSE NUMBER	SUBJECT	CREDITS
	Core courses:	29—31
346-256A	Systematic Botany	4
346-451A	Plant Ecology	3
349-307A	Natural History of Vertebrates	3
375-410B	Wildlife Ecology	3
375-415A	Law and the Protection of Fauna and Flora	2
		44—46

Primary Electives: a minimum of 24 credits selected from the following list in consultation with the major professor.

COURSE NUMBER	SUBJECT	CREDITS
342-301B	Principles of Animal Breeding	3
342-323A	Mammalian Physiology	4
342-330A	Fundamentals of Nutrition	3
342-332B	Applied Animal Nutrition	3
342-422B	Reproductive Physiology	3
349-308A	Vertebrate Morphology	3
349-315A	Biology of Inland Waters I	3
349-418A	Terrestrial Animal Ecology I	3
349-419B	Terrestrial Animal Ecology II	3
349-422A	Parasitology I	3
349-423B	Parasitology II	3
350-330A	General Entomology	3
356-201A	Introduction to Genetics	3
356-202B	Advanced Genetics	3
356-203A	Heredity, Evolution and Society	3
374-200B	Forest Resources	3
374-330A	Private Forestry	3
374-440B	Silviculture	3
375-200B	Conservation	3
375-411B	Recreation Resource Management	3
375-420A	Topics in Ornithology	3
375-437B	Assessing Environmental Impact	2

Secondary electives: a minimum of 18 credits in related courses selected in consultation with major professor.
Free electives: to meet the minimum requirement of 90 for the degree.

CURRICULA FOR THE B.Sc. (F.Sc.) DEGREE IN FOOD AND CONSUMER SCIENCES

This area of specialization offers the student a number of related Majors in the field of Food and Consumer Sciences. Depending on the Major selected the student upon completion a) is prepared to serve the community in all types of consumer information services, b) has the necessary background to become a Home Economics Specialist Teacher, c) can enter the professions of dietetics, food technology, or food administration, d) can proceed to a career in research and development, or e) do graduate work in the different scientific fields.
Prof. E.S. Idziak, Coordinator

Core courses: Required by all students taking the non-professional Majors within the Food and Consumer Sciences area of specialization — 14—16 credits.

COURSE NUMBER	SUBJECT	CREDITS
332-211A	Biochemistry I	2
332-212A	Biochemistry Laboratory	2
360-201A, B	Statistical Methods I	3
362-230B	The Microbial World	3
377-201A	Perspectives in Food Science	1
377-490D	Food and Consumer Sciences Project I	3
or		
377-491D	Food and Consumer Sciences Project II	5
		14—16

Students entering without any organic chemistry must take Organic Chemistry I (332-230A) in their first term.

Consumer Services Major

This Major is directed to subject matter dealing with areas of consumer interests and problems. By a judicious selection of electives, students may concentrate on nutrition, economics, communications arts, etc., as related to consumer education. Graduates find careers in Consumer Information Services, Marketing Research and the Communication Media.
Prof. C.L. Fergusson, Major Professor

Required courses, 38—40 credits

COURSE NUMBER	SUBJECT	CREDITS
	Core courses:	14—16
334-200A	Economics I	3
334-201B	Economics II	3
344-202B	Cellular Biology	3
376-214A	Food Fundamentals I	3
376-215B	Food Fundamentals II	3
381-330A	Consumer Education I	3
381-331B	Consumer Education II	3
386-232A	Textiles — Natural and Man-made Fibres	3
		38—40

Elective courses: To meet the minimum requirements of 90 credits for the degree. Chosen in consultation with the major professor.

Nutrition Major

The graduate from a nutrition Major has a narrow but challenging and unlimited future. Normally the graduate will continue on to further studies preparing for careers in research or as specialist in nutrition for government agencies, particularly those agencies concerned with the maintenance of the good health of our society.
Prof. H.J. Hueckel, Major Professor

Required courses, 57—59 credits

COURSE NUMBER	SUBJECT	CREDITS
	Core courses:	14—16
332-222B	Introductory Analytical Chemistry	3
332-324A	Quantitative Inorganic Analysis	3
332-451A	Food Analysis I	3
332-234B	Biochemistry II	3
342-323A	Mammalian Physiology	4
342-330A	Fundamentals of Nutrition	3
342-331B	Fundamentals of Human Nutrition	3
344-200A	Biology of Organisms I	3
344-202B	Cellular Biology	3
376-214A	Food Fundamentals I	3
382-305A	Normal Human Nutrition	3
382-435B	Applied Human Nutrition	3
382-441A	Diet Therapy I	3
382-442B	Diet Therapy II	3
		57—59

Elective courses: To meet the minimum requirements of 90 credits for the degree, chosen in consultation with the major professor.

Food Chemistry Major

This selection of courses is intended for those who look to careers as food or foodstuffs chemists in industry or the public services. The selection is also appropriate for those who may wish to proceed to graduate work in food science, biochemistry, nutritional sciences, or clinical chemistry.
Prof. B.E. Baker, Major Professor

Required courses, 57—59 credits

COURSE NUMBER	SUBJECT	CREDITS
	Core courses:	14—16
332-231B	Organic Chemistry II	3
332-222B	Introductory Analytical Chemistry	3
332-234B	Biochemistry II	3
332-324A	Quantitative Inorganic Analysis	3
332-333A	Chemical Syntheses and Laboratory Techniques	3
332-339A	Introductory Physical Chemistry	3
332-340B	Advanced Physical Chemistry	3
332-434B	Chemical Structure and Instrumentation	3
332-451A	Food Analysis I	3
332-452B	Food Analysis II	3
342-330A	Fundamentals of Nutrition	3
342-331B	Fundamentals of Human Nutrition	3
or		
344-202B	Cellular Biology	3
362-442A	Food Microbiology and Sanitation	3
377-495D	Food and Consumer Sciences Seminar	1
		57—59

Elective courses: To meet the minimum requirement of 90 credits for the degree. Chosen in consultation with the major professor.

Food Administration Major

A wide choice of management careers exists in the Food Industry. Graduates may choose from opportunities in food service areas of public restaurants, cafeterias, catering services, in-plant feeding, the armed services, institutional operations, as well as in the related fields of sales and advertising.
Prof. D.A. Raymond, Major Professor

Required courses, 54—56 credits.

COURSE NUMBER	SUBJECT	CREDITS
	Core courses:	14—16
334-200A	Principles of Economics I	3
334-201B	Principles of Economics II	3
344-202B	Cellular Biology	3
368-301A	Psychology	3
376-214A	Food Fundamentals I	3
376-215B	Food Fundamentals II	3
380-343A	Accounting & Cost Control	3
380-443B	Food Service Production Management	4
380-442A	Organization & Management	3
380-444A	Personnel Management I	3
380-445B	Personnel Management II	3
382-212B	Basic Nutrition	3
384-320B	Instructional Communications I	3
		54—56

Elective courses: to meet the minimum requirement of 90 credits for the degree. Chosen in consultation with the major professor.

Note: For continuing students only. For new students see Curriculum for the B.Cm. Degree majoring in Hospitality Management (page 39).

Majors leading to membership in Professional Associations

Dietetics Major

The majority of dietitians practise their profession as a member of a health care team in hospitals, health care units or public service agencies. Wihtin the profession there are six areas of concentration: 1) Diet therapy, 2) Teaching, 3) Administration of Dietary Services, 4) Public Information, 5) Research, and 6) Consultative Services. Selection of appropriate courses gives the students a sound foundation in their chosen field of study.
Prof. D.A. Raymond, Major Professor

Required courses, 82—84 credits

COURSE NUMBER	SUBJECT	CREDITS
	Core courses:	14—16
332-234B	Biochemistry II	3
342-323A	Mammalian Physiology	4
342-330A	Fundamentals of Nutrition	3
342-331B	Fundamentals of Human Nutrition	3
344-200A	Biology of Organisms I	3
368-301A	Psychology	3
376-214A	Food Fundamentals I	3
376-215B	Food Fundamentals II	3
380-443B	Food Service Production Management	4
380-444A	Personnel Management I	3
380-445B	Personnel Management II	3
382-441A	Diet Therapy I	3
382-442B	Diet Therapy II	3
384-320B	Instructional Communication I	3
344-202B	Cellular Biology	3
356-203A	Heredity, Evolution and Society	3
370-230A	Sociology	3
376-312A	Advanced Foods	3
380-343A	Accounting and Cost Control	3
380-442A	Organization and Management	3
382-305A	Normal Human Nutrition	3
382-435B	Applied Human Nutrition	3
		82—84

Electives: to make up 90 credits required for the degree.

Food Science Major

The course selection reflects the requirements for membership in the professional association of Food Technologists. Graduates find employment in the areas tesponsible for product quality control, food processing management, industrial research and development, or they may continue to do graduate studies in the applied sciences.

Prof. H.J.T. Beveridge, Major Professor

Required courses: 59—61 credits

COURSE NUMBER	SUBJECT	CREDITS
	Core courses:	14—16
332-222B	Introductory Analytical Chemistry	3
332-234B	Biochemistry II	3
332-324A	Quantitative Inorganic Analysis	3
332-339A	Introductory Physical Chemistry	3
332-451A	Food Analysis I	3
332-452B	Food Analysis II	3
334-200A	Principles of Economics I	3
336-320A	Systems for Processing Food Products	3
342-330A	Fundamentals of Nutrition	3
348-330A	Technical & Research Writing	3
358-444B	Fruit & Vegetable Processing	3
360-203A	Digital Computing I	3
362-230B	The Microbial World	3
362-442A	Food Microbiology and Sanitation	3
376-214A	Food Fundamentals I	3
		—
		59—61

Elective courses: To meet the minimum requirement of 90 credits for the degree. Chosen in consultation with major professor.

CURRICULUM FOR THE B.Ed. DEGREE MAJORING IN HOME ECONOMICS

This program leads to a B.Ed. degree majoring in home economics. The student registers for two years in the School of Food Science (Macdonal Campus) followed by one year in the Faculty of Education (Montreal Campus). Graduates also receive a Teaching Permit for secondary schools in Quebec which is replaced by a Teaching Certificate after two years of successful teaching. This program also prepares the student for extension of communications positions in home economics.

Mrs. E. Murphy, Major Professor

Required courses, 36 credits

COURSE NUMBER	SUBJECT	CREDITS
370-341A	Urban Community	3
376-214A	Food Fundamentals I	3
376-215B	Food Fundamentals II	3
378-332A	Family Living — Development	3
381-330A	Consumer Education I	3
381-331B	Consumer Education II	3
382-212B	Basic Nutrition	3
384-320B	Instructional Communications I	3
386-220B	Contemporary Clothing Construction	3
386-322B	Psychological and Social Bases of Clothing	3
386-232A	Textiles — Natural and Man-made Fibres	3
*436-375A/B	Approaches to Teaching Housing and Design	3
		—
		36

*(Presented by Faculty of Education on Macdonald campus)

Elective courses: To meet the minimum requirements of 60 credits. Chosen in consultation with major professor. A further 30 credits will be taken in the Faculty of Education for completion of the degree.

Major leading to a B.Com. Degree in Hospitality Management

Careers in hotel, motel, and tourist management and in the management of restaurants, cafeterias, food service category and related areas are open to graduates of this major.
Prof. D. A. Raymond, Major Professor

Required courses at Macdonald College — 31 credits

COURSE NUMBER	SUBJECT	CREDITS
362-442A	Food Microbiology and Sanitation	3
376-214A	Food Fundamentals I	3
376-215B	Food Fundamentals II	3
377-490D	Food and Consumer Sciences Project I	3
380-345B	Food Facility Layout	3
380-443B	Food Service Production Management	4
380-442A	Organization and Management	3
382-212B	Basic Nutrition	3
PLUS TWO ELECTIVES; Selected from the following		
334-230B	Economics of Marketing	3
368-301A	Psychology	3
370-342B	Social Processes and Social Institutions	3
370-550A	Research Methods for Social Surveys	3
375-411B	Recreation Resource Management	3
376-413B	Food Product Development	3
384-320B	Instructional Communication I	3

4.6 ASSOCIATED COLLEGES

By special agreement, the Nova Scotia Agricultural College, Truro, N.S., has arranged to provide their students with a program of study permitting transfer to the upper years in Agriculture or Food Science at Macdonald College. Students who have completed such a program of study with satisfactory standing in courses equivalent to those of the B.Sc. (Agr.), the B.Sc. (Agr. Eng.) and the B.Sc. (F.Sc.) curricula will be admitted to the appropriate years of the program, provided that their overall averages, and their grades in individual courses are considered satisfactory by the Committee on Admissions.

4.7 REQUIREMENTS FOR GRADUATION

The requirements for graduation are:

(a) A minimum CGPA of 2.00 with the minimum credit requirements for the Major.
(b) Practical experience. Satisfactory fulfilment of regulations concerning practical and professional experience, as below.

At least one season of farm experience is essential for admission to certain options in agricultural sciences. Students who have not secured such experience by the beginning of the Second year may find themselves ineligible for admission to these options. In the case of students from outside Canada, this experience is best obtained in the country from which the student comes.

Students majoring in Agronomy are advised to spend one summer in the Agronomy Department at the College, or at some other approved college or experimental farm. This may be between the First and Second or Second and Third years.

Students majoring in Agricultural Engineering are required to have at least 1,000 hours experience in some phase of agricultural engineering work approved by the Agricultural Engineering Department.

In General Agricultural Science, farm experience or experience in a related area is not a prerequisite to registration in this option. However, some background is desirable and can be reviewed with the Chairman in terms of the specific interests of the students at first registration in the Option.

Students majoring in Horticulture are advised to spend one summer in the Horticulture Department at the College, or at some approved vegetable farm, fruit farm, or nursery.

No summer work or practical experience requirements need be met in the case of students majoring in other options.

5 DESCRIPTION OF COURSES

5.1 AGRICULTURAL ENGINEERING

NOTE: Instructors may refuse registration in a course to any student who does not have, in their opinion, an adequate academic background in the area.

336-210A. MECHANICS I. (4 Credits; 3 lectures and 2 hours-problems.) Non-concurrent force systems; analysis of simple trusses and multiforce frames; friction; shearing forces and bending moments in beams and frames; centres of gravity; solution of problems by energy methods.
Professor McKyes

336-211B. MECHANICS II. (4 Credits; 3 lectures and 2 hours-problems; Prerequisite: Agricultural Engineering 336-210A.) Kinematics, dynamics, energy, momentum, relative motion, the moment of momentum of particles and rigid bodies; the inertia tensor; introduction to vibrations.
Professor Kok

336-212A. GRAPHICS. (3 Credits; 2 lectures and 2 2-hour labs.) Solution of two- and three-dimensional geometry problems by graphical techniques, charts and nomography; graphical calculus.
Professor Ogilvie

336-214L. SURVEYING. (2 Credits; 2 weeks following second term.) Use of engineer's tape, level, transit, plane table, hand level, and compass for land measurement, differential levelling, topographic mapping, surveying computations and preparation of plans.
Professor Broughton

336-215B. PRINCIPLES OF HYDROLOGY. (3 Credits; 3 lectures and one 2-hour lab.) Measurement and analysis of components of the water cycle. Precipitation, mass curves, intensity — duration — frequency relationships. Energy balance, evapotranspiration from lakes, soil and vegetal covers. Interception, infiltration, ground-water and wells. Runoff hydrograph components. Estimation of water quantities and water flow rates for design of water control projects. Snowmelt, basin yield.
Professor Broughton

336-216B. MATERIALS SCIENCE. (3 Credits; 2 lectures and 1 2-hour lab.) Relation between structure and properties in ceramic and organic materials. Bonding, structures, imperfections. Phase diagrams. Shaping, joining and testing of materials. Heat treatment, work in hardening and annealing of metals, introduction to physical metallurgy and processes. Failure theories.
Professor McKyes

336-305B. FLUID MECHANICS. (4 Credits; 3 lectures and one 2-hour lab. or problems.) Properties of fluids; principles of flow of incompressible and compressible fluids; pressure boundary layers; conduit and open channel systems; simple applications to turbo machinery.
Professor Broughton

336-312A. CIRCUIT ANALYSIS. (3 Credits; 3 lectures and one 2-hr. lab. or problems.) General circuit laws and d.c. circuits; electromagnetic circuits; inductance and capacitance; natural and forced response of circuits; analysis of single phase and three phase networks; electromechanical, electrochemical and electron energy conversion; electrical instruments.
Dr. Raghavan

336-314A. AGRICULTURAL STRUCTURES. (3 Credits; 3 lectures and 2-hr. lab.) Analysis and design of structures to house animals and plants and to process and store animal and plant products. Introduction to environmental control systems and animal waste management.
Professor Ogilvie

336-315B. MACHINE DESIGN. (4 Credits; 3 lectures, 2 hours-problems; Prerequisite: Agricultural Engineering 336-341B.) (Offered in alternate years, given in 1977-78.) Design of shafting, bearings, gear, belt and chain drives, clutches, brakes, vibrations, fasteners, welded joints, frames. Principles and practices of Engineering Drawing will be adhered to in laboratory submissions.
Dr. Raghavan

336-316B. INSTRUMENTATION AND MEASUREMENT. (3 Credits; 2 lectures and 1 conference.) Problems of measurement, with principles behind use of instruments in chemical and physical measurements, and the errors inherent in such analyses. Laboratory practice in instrumentation and measurement techniques.
Professors Norris, Henneberry, Schuepp and Mackenzie

336-320A. SYSTEMS FOR PROCESSING FOOD PRODUCTS. (3 Credits; 3 lectures and one 2-hr. lab.) Principles and use of electrical, piping, steam, refrigeration, hydraulic power; materials handling, environmental control and plant management systems in the food industry; pumps and valves.
Professor Kok

336-321B. UNIT OPERATIONS IN FOOD PROCESSING. (3 Credits; 3 lectures and one 2-hr. lab.; Prerequisite: 336-320A or 302-211A.) (Offered in alternate years, given in 1976-77.) Heat and mass transfer, differential contact processes, distillation, absorption, extraction, drying, evaporation crystallization, filtration, centrifugation, sedimentation.
Professor Kok

336-322B. FOOD PRODUCTION AND PROCESSING WASTE MANAGEMENT. (3 Credits; 2 lectures and one 2-hr. lab.) (Offered in alternate

years, given in 1976-77.) Characteristics of waste; storage, transport and disposal, treatment processes, aspects of pollution control.
Professor Ogilvie

336-323A. PHYSICAL PROPERTIES OF BIOLOGICAL MATERIALS. (3 Credits; 2 lectures and one 2-hr. lab.) (Offered in alternate years, given in 1977-78.) An engineering analysis of the structure, physical attributes, mechanical and rheological properties of biological materials, emphasizing the relationship of these properties to production and processing of agricultural products and food. Mathematical models considering size, shape, volume, surface area, density, quasistatic and dynamic viscoelastic behaviour; non-Newtonian fluid models; optical properties; behaviour of granular materials.
Professor Norris

336-324B. INDUSTRIAL PROCESSES IN THE FOOD INDUSTRY. (3 Credits; 3 lectures and 1 2-hr. lab.) Industrial Processes used in the dairy, meat, canning, fermentation, grain, sugar, fish and poultry industries. The process flow sheet, specialized machinery, microbiological aspects and waste treatment of each will be discussed.
Professor Kok

336-341B. STRENGTH OF MATERIALS. (4 Credits; 3 lectures and one 3-hr. lab.; Prerequisite: Agricultural Engineering 336-210A.) Stress, strain, resilience, elastic and plastic properties of materials; bending moment and shear force diagrams; bending and shear stress; deflections; simple, fixed and continuous beams, torsion and helical springs, reinforced concrete beams; columns, bending and direct stress; general case of plane stress; Mohr's circle.

336-410B. INSTRUMENTATION AND CONTROL. (3 Credits; 3 lectures and one 2-hr. lab.; Prerequisite: Agricultural Engineering 336-312A.) (Offered in alternate years, given in 1976-77.) Principles and operating characteristics of electrical transducers with emphasis on their application in agricultural process control and research.
Professor Norris

336-411B. OFF-ROAD POWER MACHINERY. (3 Credits; 2 lectures and one 3-hr. lab.; Prerequisite: Agricultural Engineering 336-211B.) (Offered in alternate years, given in 1977-78.) Mechanics of wheels and tracks; terrain vehicle mobility and soil trafficability; vehicle stability, steering forces and steering geometry; compression and spark ignition engines; fuels and lubricants, introduction to combustion.
Professor McKyes

336-412A. AGRICULTURAL MACHINERY. (3 Credits; 3 lectures and 1 lab.) Study and analysis of machines for tillage, harvesting, crop processing and handling. Field tests, load studies, design requirements; design of machines and components for agricultural applications.
Professor Norris

336-413B. MATERIALS HANDLING SYSTEMS. (3 Credits; 3 lectures; Prerequisites: Mathematics 360-201A and 360-203A.) (Offered in alternate years, given in 1977-78.) Systems and equipment for handling agricultural and food products. Introduction to work study methods and operations research.
Professor Ogilvie

336-416B. ENGINEERING FOR LAND DEVELOPMENT. (3 Credits; 3 lectures and one 2-hr. lab.; Prerequisites: 336-214L and 336-215B) (Offered in alternate years, given in 1976-77.) The engineering aspects of irrigation, drainage, erosion control and land clearing, water conservation, projects, dam and reservoir design and integrated development projects.
Professor Broughton

336-418B. SOIL MECHANICS AND FOUNDATIONS. (3 Credits: 2 lectures and one 3-hr. lab.) (Offered in alternate years, given in 1976-77.) The exploration of subsoils, strength theories, granular and cohesive soils, foundation design, settlement calculation, consolidation, slope stability, Atterberg limits, triaxial testing, direct shear testing, compaction, soil freezing, frost heaving.
Professor McKyes

336-419B. STRUCTURAL DESIGN. (3 Credits; 3 lectures and one 3-hr. lab.; Prerequisites: Agricultural Engineering 336-341B, Civil Engineering 303-213A.) (Offered in alternate years, given in 1976-77.) Structural Design in steel and timber; application of complete design procedures to working stress design; plastic design for ultimate loading.

336-490D. PROJECT. (3 Credits; 1 lecture.) Presentation of oral and written reports on approved Agricultural Engineering projects. Library and laboratory research will be required.
Professor Ogilvie and Staff

336-511B. AGRICULTURAL AND EARTHMOVING POWER MACHINERY. (3 Credits; 2 lectures and 2 labs.; Prerequisite: 336-418B.) (Offered in alternate years, given in 1976-77.) An advanced treatment of off-road vehicle design. Topics include performance characteristics, internal combustion engines, analysis of power transmission devices, distribution of stresses between wheeled or tracked vehicles and soil, mobility and pull efficiency, soil cutting, earthmoving, plowing, ripping and transport, wheel and track steering geometries, vehicle morphology.
Professor McKyes

Graduate courses available to undergraduates:

336-602B. ENVIRONMENT CONTROL IN AGRICULTURAL STRUCTURES. (3 Credits; 3 lectures and one 2-hr. lab.; Prerequisites: Mech. Engineering 305-040A, 305-246A.) (Offered in alternate years, given in 1975-76.)

336-605B. FUNCTIONAL ANALYSIS OF MACHINES. (3 Credits; 3 lectures; Prerequisites: Agricultural Engineering 336-211B and 336-323A.) (Offered in alternate years, given in 1976-77.)
Professor Norris

The following courses to be taken with the Faculty of Engineering, McGill Campus. (See Faculty of Engineering Announcement for descriptions.)

305-346A. HEAT TRANSFER. (3 Credits; 3 lectures and 1 hr. problems.)

or

302-311A. HEAT TRANSFER. (4 Credits; 3 lectures.)

305-330A. FLUID MECHANICS. (3 Credits; 3 lectures and 1 hr. lab.) if 336-305B not taken.

305-240A. THERMODYNAMICS I. (3 Credits; 3 lectures and 1 hr. problems.)

5.2 AGRICULTURE

330-211B. PRINCIPLES OF PLANT SCIENCE. (2 Credits; 3 lectures.) Plants as the basic food resource for man. The relation between plants and different segments of the ecosystem with respect to ability to manage the system.
Professors Taper and Steppler

330-310B. FOOD FOR MAN-AGRICULTURE AND SOCIETY. (3 Credits; 2 lectures and one 2-hr. conference.) This course will develop understanding and awareness of agriculture's role in society. The nature of agriculture, the impact of changes in agricultural technology on society and on environment, use of natural resources by agriculture, and present and future role of agriculture in developed and less developed countries will be examined.
Professor Steppler

330-310A. Same as above. Given on the Montreal Campus.

330-410B. COMPARATIVE AGRICULTURE. (3 Credits; 2 lectures and 1 conference.) A study of international agriculture; physical, biological and social resource bases for agriculture in developing countries; land tenure and marketing; technology transfer and aid programs; sugar, cassava and animal production systems; rural development programs.
Professors Donefer, Steppler, van Lierop and Warkentin

330-495D. SEMINAR AND ASSIGNMENT. (2 Credits; 1 lecture.) Preparation, presentation and discussion of reports upon approved agricultural subjects chosen in consultation with staff members of the departments concerned.
Professor Bible

5.3 AGRONOMY

340-331A. CEREAL CROPS. (3 Credits; 3 lectures and 1 3-hr. lab. period.) (Offered in alternate years, given in 1976-77.) Textbook: *Cereal Crops* by Leonard and Martin (Collier-Macmillan Ltd.) An intensive study of cereal crops (small grains, corn, etc.), including historical development, economic importance, botanical relationships, geographical distribution of types and cultivars; cultural practices in cereal crop production; quality factors associated with grading, processing and utilization of cereal crop products.
Professor Klinck

340-332B. INDUSTRIAL CROPS. (3 Credits; 3 lectures and 1 3-hr. lab.) (Offered in alternate years, given in 1976-77.) A study of temperate and subtropical crops grown for oil, fibre, sugar and other industrial products. Attention is given to historical development and economic importance, botanical types and cultivars, cultural practices, quality factors, grading, processing and utilization.
Professor Gendron

340-333A. FORAGE CROPS. (3 Credits; 3 lectures and 1 3-hr. lab.) An intensive study of the scientific information available relevant to forage crop production. The plant materials will be studied from a morphological, physiological and ecological point of view. Cultural practices, seed production, conservation methods and quality evaluation will all be considered.
Professor Steppler

340-350C. EXPERIMENTAL METHODS IN AGRONOMY. (2 Credits; Summer session.) A course designed to provide the student with practical knowledge of handling experimental plant materials in Agronomy. Practice in preparation and establishment of research plots in the field and in controlled environment rooms, recording and analysing data from crop measurements, harvesting and processing research materials, crop hybridization, preparation of reports.
Staff

340-434A. WEED BIOLOGY AND CONTROL. (3 Credits; 3 lectures and 1 3-hr. lab.) A study of the biology of undesirable vegetation — weeds — as related to the principles of prevention and physical, biological, managerial and chemical control.
Professor Watson

340-435B. PLANT BREEDING. (3 Credits; 3 lectures and 1 2-hr. lab.) Problems, methods and the interpretation of results, in the breeding and improvement of plants.
Professor Lawson

340-436B. CROP ADAPTATION AND DISTRIBUTION. (3 Credits; 3 lectures and 1 3-hr. lab.) (Offered in alternate years, given in 1975-76.) Factors influencing crop adaptation and their effect on distribution.
Professor Gendron

340-439A. FIELD MANAGEMENT. (3 Credits; 3 lectures and 1 3-hr. lab.) Application of soil science and biology to crop production. Limiting factors to crop yields and treatments to overcome limitations. Use of fertilizers and manures, herbicides, crop rotation, tillage, drainage and irrigation, etc. to overcome limitations and to conserve soil productivity.
Professor Gendron

340-440B. SEED DEVELOPMENT, PRODUCTION AND ANALYSIS. (3 Credits; 2 lectures and 1 3-hr. lab.) (Offered in alternate years, given in 1975-76.) The development and life processes of seeds in relation to seed production, processing and storage. A study is made of seed characteristics and their utilization in seed separation, analysis and grading. Attention is given to seed marketing services, seed certification systems and seed laws.
Professor Klinck

340-490D. PROJECTS. (3 Credits; 1 lecture.) Directed study on an approved problem, requiring both oral and written presentation. U2 and U3 students must attend all oral presentation.
Staff

5.4 ANIMAL SCIENCE

342-250A. PRINCIPLES OF ANIMAL SCIENCE. (2 Credits; 3 lectures.) Scientific principles underlying the livestock and poultry industries i.e., breeding, physiology, nutrition and disease — and their influence upon management practices. Emphasis is placed on the adjustment of environment to the animal.
Professor Touchburn

342-301B. PRINCIPLES OF ANIMAL BREEDING. (3 Credits; 3 lectures and 1 2-hr. lab.; Prerequisite: Genetics 356-201A.) The qualitative and quantitative aspects of genetics as they apply to the economic improvement of domestic mammals and birds. Areas covered include animal domestication, animal cytology, mendelian traits of economic importance, principles of population genetics, statistical tools to describe populations, environmental effects, selection and mating systems.
Professors Moxley and Buckland

342-312B. ANIMAL PATHOLOGY. (3 Credits; 3 lectures.) An introductory course of Animal Pathology. Includes discussion of causative agents, the development of the disease process, degenerative changes, protective mechanisms, factors influencing spread of disease and the control of disease.
Professors Martin and Downy

342-323A. MAMMALIAN PHYSIOLOGY. (4 Credits; 3 lectures and 1 3-hr. lab.; Prerequisite: Biology 344-202B.) A study of the functions of various organs in mammals including the nervous system, muscle, blood, the cardiovascular system, respiration, gastro intestinal and metabolic systems, urinary systems, the endocrine glands and the reproductive system.
Professor Lague

342-330A. FUNDAMENTALS OF NUTRITION. (3 Credits; 3 lectures and 1 2-hr. lab.; Prerequisites: Chemistry 332-232A and 332-234B.) A discussion of the nutrients; water, carbohydrates, lipids, proteins, minerals and vitamins, with particular emphasis on their functions in and essentially for the animal organism.
Professor Hartsock

342-331B. FUNDAMENTALS OF HUMAN NUTRITION. (3 Credits; 3 lectures and 1 2-hr. lab.; Prerequisite: Animal Science 342-330A.) Emphasis on applied quantitative aspects of human nutrition. Nutrient utilization, evaluation and requirements, as related to dietary standards.
Professor Donefer

342-332B. APPLIED ANIMAL NUTRITION. (3 Credits; 3 lectures and 1 2-hr. lab.) Classification of feedstuffs based on their function in rations; discussion of digestibility and utilization of nutrients, energy and nutrient requirements for maintenance, production and reproduction and integration of these into feeding programs for livestock and poultry.
Professors Donefer, Harper, Hartsock and Touchburn

342-422B. REPRODUCTIVE PHYSIOLOGY. (3 Credits; 3 lectures and 1 3-hr. lab.; Prerequisite: Animal Science 342-323A.) Comparative physiology of reproduction in laboratory and domestic animals. Hypothalamic, pituitary and gonadal interrelationships, synchronization of estrus, artificial insemination, livability of spermatozoa and ova "in vivo" and "in vitro", ova transplantation, prenatal and early post-natal development and infertility problems are discussed.
Professor R.D. Baker

342-424B. METABOLIC ENDOCRINOLOGY AND GASTRO-INTESTINAL PHYSIOLOGY. (3 Credits; 3 lectures and 1 3-hr. lab.; Prerequisite: Animal Science 342-323A.) A detailed study of the metabolic endocrine system and its role in the maintenance of homeostasis, and study of the physiology of digestion.
Professor Lague

342-432A. ADVANCED ANIMAL NUTRITION. (3 Credits; 2 lectures and 1 1-hr. conference; Prerequisite: Animal Science 342-332B.) Critical discussion of criteria for nutritive evaluation of feedstuffs, current practices and development of feeding programs, specific aspects of ruminant nutrition, discussion of feed additives.
Professors Hartsock, Donefer, Harper and Touchburn

342-450A. DAIRY CATTLE PRODUCTION. (3 Credits; 3 lectures and 1 2-hr. lab.) The application of biological principles of genetics, physiology, nutrition and pathology as well as principles of economics and engineering and the integration of these principles, through management, for the maximum production efficiency of milk and meat by dairy cattle. Recent developments in livestock production will be emphasized. Trips to dairy farms and related enterprises will comprise part of the laboratory work.
Professor Harper

342-452A. BEEF CATTLE AND SHEEP PRODUCTION. (3 Credits; 3 lectures and 1 2-hr. lab.) The application of biological principles of genetics, physiology, nutrition and pathology as well as principles of economics and engineering and the integration of these principles, through management, for the maximum production efficiency of beef and sheep. Trips to beef and sheep farms and related enterprises will comprise part of the laboratory work.
Professor Donefer

342-454B. SWINE PRODUCTION. (3 Credits; 3 lectures and 1 2-hr. lab.) The application of biological principles of genetics, physiology, nutrition and pathology as well as principles of economics and engineering and the integration of these principles, through management, for the maximum production efficiency of swine. Trips to swine farms and related enterprises will comprise part of the laboratory work.
Professor Hartsock

342-456B. POULTRY PRODUCTION. (3 Credits; 3 lectures and 1 2-hr. lab.) The application of biological principles of genetics, physiology, nutrition and pathology, as well as principles of economics and engineering and the integration of these principles, through management, for the maximum production efficiency of poultry meat and eggs. Trips to poultry farms and related enterprises will comprise part of the laboratory work.
Professor Buckland

342-490D. PROJECT IN ANIMAL SCIENCE. (3 Credits.) A project to be completed under the supervision of a staff member of the Department of Animal Science. An agreement between student and the involved staff member must be reached prior to registration.
Professor Buckland

342-495D. SEMINAR. (2 Credits; 1 lecture and 1 lab.) Instruction on the preparation, presentation and discussion of critical reviews of topics important to Animal Agriculture to be followed by student presentation of above reviews.
Professors Hartsock and Buckland

Graduate courses available to undergraduates

G342-602D. PROBLEMS IN ANIMAL BREEDING. (6 Credits.) (Offered in alternate years, given in 1976-77.)

G342-604A. POPULATION GENETICS IN ANIMALS. (3 Credits.)

G342-632D. ADVANCED NUTRITION. (6 Credits.) (Offered in alternate years, given in 1976-77.)

G342-650D. ADVANCED ANIMAL BIOCHEMISTRY. (6 Credits.)

G342-603A. PHYSIOLOGICAL GENETICS OF DOMESTIC ANIMALS. (3 Credits.) (Offered in alternate years, given in 1977-78.)

5.5 BIOLOGY

344-120A. GENERAL BIOLOGY. (3 Credits; 3 lectures.) The basis of life in terms of structures and processes; the cell, tissues, organs, systems, organisms, societies; plant and animal structure, common functions of metabolism, nutrition, growth, perception, reproduction; introduction to embryology, ecology, genetics, evolution. Higher animals and plants are emphasized.

344-200A. BIOLOGY OF ORGANISMS I. (3 Credits; 3 lectures and 1 lab.) The major taxonomic divisions of living organisms; the Protozoa with special reference to holozoic and saprozoic forms; animal embryology as an introduction to the Metazoa; a survey of the structure and biology of the major invertebrate phyla, with emphasis on animal parasites and entomology.
Professor McFarlane

344-201B. BIOLOGY OF ORGANISMS II. (3 Credits; 3 lectures and 1 lab.) Comparative evolutionary review of the plant kingdom, excluding the angiosperms, except for embryology and seed germination. Plant evolution, including some fossil genera, isotopic age determination, continental drift sequential evolution and telome theory. Pollination as a case study of plant evolution.
Professor Woodland

344-202B. CELLULAR BIOLOGY. (3 Credits; 3 lectures and 1 demonstration.) The aim of this course is to develop a working concept of cellular biology in procaryotic and eucaryotic cells, including their interaction with viruses. This concept includes structure, function and replication of theoretical cell types with the emphasis on structure and structurally related function. Some examples of specialized cells are then provided to illustrate some of the differences between cell types.
Professor Devoe and Staff

344-205B. PRINCIPLES OF ECOLOGY. (3 Credits; 2 lectures and 1 conference.) This introductory course is designed to give the student an understanding of the interactions of organisms and the physical environment. Ecological principles will be

discussed at the level of the individual, the population and the community.
Professors Stewart, Knowles and Bider

344-306B. BIOLOGICAL INSTRUMENTATION. (3 Credits; 2 3-hr. labs.) Physical and chemical methods applied to biology including theory and practice of modern instrumentation as applied to pH, chromatography, spectroscopy, centrifugation, radioactivity and electrophoresis.
Professors Ingram and Peterson

344-495D. ENVIRONMENTAL BIOLOGY SEMINAR. (2 Credits; 1 lecture.) Presentation of papers on, and discussion of, topics from the field of Environmental Biology.
Professor Stewart

5.6 BOTANY

346-251A. PLANT HISTOLOGICAL AND CYTOLOGICAL METHODS. (3 Credits; 2 2-hr. labs.) (Offered in alternate years, given in 1976-77.) A laboratory lecture course dealing with methods for the study, measurement and reproduction of plant cells and tissues by various physico-chemical means, including microscopy and photography.
Professor Estey

346-252B. PLANT ANATOMY AND HISTOLOGY. (2 Credits; 2 lectures and 1 2-hr. lab.) A detailed study of cells, cell division, tissues and their development, and the general anatomy of vascular plants.
Professor Estey

346-256A. SYSTEMATIC BOTANY. (4 Credits; 2 lectures and 2 3-hr. labs.) Principles of classification and identification of vascular plants with special emphasis on those families of economic and practical importance; also an introduction to modern taxonomic methods. Field trips.
Professor Woodland

346-353A. PLANT PHYSIOLOGY. (4 Credits; 3 lectures and 1 3-hr. lab.) Respiration, photosynthesis, mineral nutrition, nitrogen nutrition, water relations, translocation of solutes, development and reproduction.
Professor Pelletier

346-355A, B. SPECIAL TOPIC IN BOTANICAL SCIENCES. (2 Credits; 1 conference.) A course of independent study by the student with the guidance of a person of recognized competence in the general area of the chosen topic.
Staff

346-451A. PLANT ECOLOGY. (3 Credits; 3 lectures and 1 3-hr. lab.) A study of the major vegetation units; the influence of environmental factors on the evolution, distribution, and succession of plant communities, and on the distribution, form and function of plant species. Methods of ecological analyses.
Professor Woodland

346-454B. PLANT MORPHOLOGY. (3 Credits; 3 lectures and 1 lab; Prerequisite: Biology 344-201B or equivalent.) (Offered in alternate years, given in 1977-78. This course is a comparative study of plant structure and reproduction in algae, fungi, bryophytes and vascular plants emphasizing both fossil and living groups. Laboratory attention will be given to preserved, living and fossil material of the plant groups discussed in lectures.
Professor Woodland

346-455A. SPECIAL TOPIC IN THE BOTANICAL SCIENCES. (2 Credits; 1 conference.) A course of independent study by the student with the guidance of a person of recognized competence in the general area of the chosen topic.
Staff

346-490D. PROJECT. (3 Credits; 1 lecture and equivalent 1 3-hr. lab.) Each student is assigned a botanical problem entailing individual investigation, preparation of report in publication form, and oral presentation of scientific paper.
Staff

346-496D. SEMINAR. (2 Credits; 1 lecture.) (Plant Pathology and Botany.) Written and oral presentation of critical reviews of important topics and current research articles in Plant Pathology and Botany for group discussion.
Staff

5.7 CHEMISTRY

332-110A. INORGANIC CHEMISTRY. (3 Credits; 3 lectures.) The course will be comprised of discussions and problems in writing and balancing equations, chemical equilibrium and mass action, stoichiometry, colligative properties and solution laws.
Professor Henneberry

332-211A BIOCHEMISTRY I. (2 Credits; 3 lectures. Prerequisite: 332-230A.) Chemistry of carbohydrates, lipids, proteins and nucleic acids; enzymes coenzymes and enzyme kinetics; introduction to intermediary metabolism.
Professor Hueckel

332-212A BIOCHEMISTRY LABORATORY. (2 Credits; 1 lecture, 1 lab. Corequisite: Chemistry 332-211A or equivalent). The laboratory use of ionic strength and pH; the chemical properties of carbohydrates, lipids, proteins and enzymes; the instruction of laboratory techniques such as titration, chromatography, the use of the analytical balance and the pH meter.
Professor Hueckel

332-222B. INTRODUCTORY ANALYTICAL CHEMISTRY. (3 Credits; 2 lectures and 1 lab.) An introduction to practical qualitative and quantitative Chemistry. The lecture material will cover hydrolysis reactions; sampling and sample preparation; the theory of acidimetry; methods of group separation.
Professor Henneberry

332-230A. ORGANIC CHEMISTRY I. (3 Credits; 3 lectures and 1 lab.) Fundamental concepts of organic chemistry; structure, nomenclature and properties of typical aliphatic and aromatic compounds, lipids, carbohydrates and proteins. Laboratory work includes exercises on recrystallization, distillation, extraction, chromatography and some simple organic preparations.
Professor B.E. Baker

332-231B. ORGANIC CHEMISTRY II. (3 Credits; 2 lectures and 1 lab.; Prerequisite: Chemistry 332-230A.) Introduction to organic synthesis and reactions of functional groups of aliphatic, aromatic and hetercyclic compounds. Basic concepts of Sn1 and Sn2 displacement reactions, resonance, geometrical and optical isomerism, free radicals and polarimetry. Laboratory work includes the preparation, purification and studies on the properties of several organic compounds.
Professor B.E. Baker

332-234B. BIOCHEMISTRY II. (3 Credits; 3 lectures and 1 lab.; Prerequisite: Chemistry 332-232A.) Regulation of anabolism and catabolism in man and domestic animals; the action of hormones; alimentary digestion and absorption; urinary and fecal excretion.
Professor Hueckel

332-324A. QUANTITATIVE INORGANIC ANALYSIS. (3 Credits; 1 lectures and 1 lab.; Prerequisite: Chemistry 332-222B.) A development of the quantitative methods introduced in Chemistry 332-222B. The course will consist of discussions and practical work in redoximetry; ion exchange resins; potentiometric analysis; colorimetry and some of the theory of I.R. and N.M.R. analyses.
Professor Henneberry

332-333A. CHEMICAL SYNTHESES AND LAB. TECHNIQUES. (3 Credits; 2 lectures and 1 lab.; Prerequisite: Chemistry 332-231B.) Principles of organic synthesis. Stress will be laid on laboratory procedures and methodology.
Professor B.E. Baker

332-339A. INTRODUCTORY PHYSICAL CHEMISTRY. (3 Credits; 3 lectures and 1 lab.) Introduction to kinetic theory, thermodynamics, properties of liquids and solids; chemical equilibrium and the law of mass action, phase rule, properties of solutions, surface and colloid chemistry, chemical kinetics, photochemistry, electrochemistry and radioactivity.
Professor Anastassiadis

332-340B. ADVANCED PHYSICAL CHEMISTRY. (3 Credits; 2 lectures and 1 lab.; Prerequisite: Chemistry 332-339A.) An advanced course of thermodynamics, molecular structure, kinetics, properties of electrolytes, absorption and macromolecules. Quantum aspects of physical chemistry.
Professor Anastassiadis

332-434B. CHEMICAL STRUCTURE AND INSTRUMENTATION. (3 Credits; 2 lectures and 1 lab.; Prerequisites: Chemistry 332-333A, Mathematics 360-202A.) Modern concepts of atomic and molecular structures. Bond energies and reaction mechanisms. Determinations of purity and structure of chromatographic and spectrometric techniques.
Professor B.E. Baker

332-451A. FOOD ANALYSIS I. (3 Credits; 2 lectures and 1 lab.; Prerequisite: Chemistry 332-232A.) Proximate analysis. Chemical examinations of sugars, starches, cereals, oil seeds, fat and fat products, fruits, dairy and meat products. Vitamins, food colours, flavours. Contaminants. Physiochemical methods used in food analysis.
Professor Anastassiadis

332-452B. FOOD ANALYSIS II. (3 Credits; 2 lectures and 1 lab.; Prerequisite: Chemistry 332-451A.) A specialized course on the principal analytical techniques used for analysis of carbohydrate, lipid, protein and vitamin constituents of foods and feedstuffs, and for detection and determination of chemical additives and contaminants.
Professor Beveridge

5.8 COMMUNICATION ARTS

384-320B. INSTRUCTIONAL COMMUNICATIONS I. (3 Credits; 3 lectures and 1 lab.; Prerequisite: Food Fundamentals 376-214A. Psychology 386-301A.) Understanding of the instructional communications principles and methodology and the application to small group instructions and demonstrations. Explorations of the use of audio-visual aids and the mass media in this context. Laboratory work will provide opportunities to apply and evaluate student understanding of the principles.

5.9 CONSUMER SERVICES

381-330A. CONSUMER EDUCATION I. (3 Credits; 3 lectures and 1 lab.) Role of the consumer in the economy; factors which influence consumer demands and satisfactions; problems in modern buyer/seller relationships.
Professor Fergusson

381-331B. CONSUMER EDUCATION II. (3 Credits; 3 lectures and 1 lab., Prerequisite 381-330A Consumer Education 1.) A study of the management of human and material resources with respect to selection of equipment, planning work space to save time and energy, management of credit, savings, investment and budgeting.
Professor Fergusson

5.10 ECONOMICS

334-200A. PRINCIPLES OF ECONOMICS I. (3 Credits; 3 lectures.) To introduce students to Canada's economic system, and the application of economic and management principles within the firm,

household or organization. Emphasis throughout is on problem-solving and decision-making by conscious application of a systematic body of knowledge to individual and firm problems.

334-201B. PRINCIPLES OF ECONOMICS II. (3 Credits; 2 lectures; 1 conference; Prerequisite: Economics 334-200A or equivalent.) To develop an understanding of the overall economic system, how it works, and the instruments used to solve social problems. Emphasis will be on decision-making involving the entire economic system and segments of it.

334-230B. ECONOMICS OF MARKETING. (3 Credits; 3 lectures; Prerequisite: Economics 334-200A or equivalent.) To promote an understanding of marketing principles and practices, their relationship to the agriculture-food system, and their economic impact on all segments of this system. Emphasis is placed on the application of marketing principles in problem-solving and in developing marketing and communication skills of the individual.

334-231B. ECONOMICS OF AGRICULTURE. (3 Credits; 2 lectures; 1 conference; Prerequisite: Economics 334-200A or equivalent.) To develop an understanding of the structure and scope of Canada's agriculture-food system, the principles of operation and financing its components, linkages, functions. Focus to be on management of the various components and the entire system, types of problems confronted now and in the future.

334-332A. FARM PRODUCTION ECONOMICS. (3 Credits; 3 lectures; Prerequisite: Economics 334-200A or equivalent.) To develop a full understanding of production systems, functions, principles, and production management, particularly in agri-business and the farm firm. The focus is to be on problem-solving.

334-333B. RESOURCE ECONOMICS. (3 Credits; Prerequisites: Economics 334-200A or equivalent.) To develop a full understanding of the role of resources in the environment, use of resources, and management of economic resources within the firm or organization. Again, the focus is to be on problem-solving, case studies involving private and public decision-making in organizations.

334-410A. LAND AND RESOURCE APPRAISAL. (3 Credits; 3 lectures) To introduce students to methods and concepts of land and resource evaluation, techniques for making choices between various land uses, and to provide relevant educational information that will enable today's students to participate fully in Canadian land use and environment decisions.

334-430B. AGRICULTURE, FOOD AND RESOURCE POLICY. (3 Credits; 3 lectures.) A senior course that will examine Canadian, provincial and international agriculture, food and resource policy, programs and their implications. Focus is also given to policy and program analysis and planning techniques, implementation and evaluation procedures.

334-435A. AGRICULTURAL ECONOMICS RESEARCH METHODS AND SPECIAL PROBLEMS. (3 Credits; 3 lectures.) A senior course dealing with research and problem solving methodology in organizing research, collecting, tabulating, analyzing and presenting evidence for resource, agriculture and food industry decision-makers. Special problems will be selected for developing research skills applicable to problem solving in marketing, production and policy.

334-440A. ADVANCED AGRICULTURE AND FOOD MARKETING. (3 Credits; 3 lectures.) A senior course in agriculture and food marketing, management and policy, including a detailed study of the conduct of marketing functions, commodity marketing, grocery products, retail and food service marketing, encompassing the total Canadian agriculture and food marketing system, from producer to consumer.

334-442B. ECONOMICS OF FOOD SYSTEMS DEVELOPMENT. (3 Credits; 3 lectures.) A senior course focusing on the description, analysis and factors affecting the design and development of present and future food systems in Canada and world-wide. Major emphasis is on the socio-economic dimensions and development planning of alternative agriculture-food systems.

334-450B. AGRI-BUSINESS MANAGEMENT. (3 Credits; 3 lectures.) A senior course in management and agricultural business dealing with agri-business firm engaged in agricultural production and marketing, and related farm supply business. The focus of the course is on agri-business, organization, operation and financial management and agri-business policy in today's complex and changing international environment.

5.11 ENGLISH

348-310B. STUDIES IN THE MASS MEDIA. (3 Credits; 3 lectures.) An exploration of the uses and abuses of language in such modern communication media as newspapers, magazines and advertising. In addition, the course will study McLuhan and the devices of semantics and logic; particularly as they apply to the appraisal of the mass media.
Professor Godfrey

348-330A. TECHNICAL AND RESEARCH WRITING. (3 Credits; 3 lectures.) A practical course in scientific writing with emphasis on basic writing competence and the techniques of clear exposition. In addition, study will be made of certain scientific articles and essays and the means by which they stimulate interest and attention.
Professor Godfrey

348-343A. THE SHORT STORY. (3 Credits; 3 lectures.) A study and discussion of representative short stories with particular reference to their theme and techniques.
Professor Godfrey

5.12 ENTOMOLOGY

350-330A. GENERAL ENTOMOLOGY. (3 Credits; no lectures or labs.; modular course with 1 conference and directed practical work.) Each student plans, in consultation with the instructor, his program from a wide range of modules. The modules are designed to introduce insect structure, physiology, development, systematics, evolution, ecology and control. The course stresses interrelationships, integrated pest control and information storage and retrieval.
Professor Hill

350-331A. INSECT MORPHOLOGY I. (3 Credits; 2 lectures, 1 lab. and project.) (Offered in alternate years, given in 1977-78.) A course discussing in depth the morphology of the integument and associated organs of insects and relating structure to function.
Professors Kevan and Ali-Khan

350-332B. INSECT MORPHOLOGY II. (3 Credits; 2 lectures, 1 lab. and project; Prerequisite: Entomology 331A.) (Offered in alternate years, given in 1977-78.) A course discussing in depth the morphology of the internal organs, sense organs and development of insects and relating structure to function.
Professors Kevan and Ali-Khan

350-350B. INSECT DEVELOPMENT AND PHYSIOLOGY. (3 Credits; 2 lectures and 1 lab. Prerequisites: Biochemistry I; Biology of Organisms I; Cellular Biology.) Course first examines growth and development, with emphasis on the changes in the integument or cuticle, the organ system of central importance in insects (and other arthropods). This leads to a consideration of insect form and the kind of development found throughout the orders of insects. The course continues with the relation of insects to their environment, including such topics as respiratory mechanism, nutrition, excretion, chemoreception, group effects and pheromones.
Professor McFarlane

350-440B. SYSTEMATIC ENTOMOLOGY. (3 Credits; 1 lecture, 1 lab. and project; Prerequisite: Entomology 350-330A.) (Offered in alternate years, given in 1976-77.) The classification of the principal orders, suborders and super-families of insects; use of keys; collecting methods.
Professors Kevan and Vickery

350-442A. ARACHNIDA AND OTHER TERRESTRIAL ARTHROPODS. (3 Credits; 3 lectures, 1 lab; Prerequisite: Biology 344-200A.) (Offered in alternate years, given in 1976-77.) The morphology, biology and general systematics of land arthropods other than true insects with special emphasis on those living on the ground and in the soil; some parasitic and other forms are also considered. Parathropods, land crustaceans, millipedes, centipedes, collembolans, scorpions, spiders, mites, ticks, etc.
Professors Hill and Kevan

350-444B. SOIL FAUNA ECOLOGY. (3 Credits; 3 lectures, 1 lab; Prerequisite: Biology 344-204B.) (Offered in alternate years, given in 1976-77.) Introduction to the fauna of soil and litter, its biology, ecology and role in soil formation and amelioration; particular attention is paid to certain groups of worms and insects and especially to collembola and mites; methods of sampling, extraction, and identification.
Professors Hill and Kevan

350-446B. BEES AND BEEKEEPING. (3 Credits; 3 lectures and 1 conference.) Theory and practical application in beekeeping. Social insects; development of social behaviour; coevolution of flowering plants and social insects; life and behaviour of honeybees; insect pollination; honey production; properties of honey; practical beekeeping. Demonstrations and written assignments essential.
Professor Vickery

350-452A. ECONOMIC ENTOMOLOGY I. (3 Credits; 3 lectures; Prerequisite: Entomology 350-330A.) A survey of non-chemical pest controls and why these succeed; control methods under investigation, integrated control, problems of application and degree of success; physical, cultural and biological methods including genetic and the sterile male techniques. Laboratory work consists of studies of organisms now effectively managed by non-chemical methods.
Professor Morrison

350-453B. ECONOMIC ENTOMOLOGY II. (3 Credits; 3 lectures; Prerequisite: Entomology 350-330A.) A survey of the chemicals used in pest control, their characteristics, the hazards posed, their legal status, their effectiveness, pollution problems and techniques for safe and effective use.
Professor Morrison

350-454A. PEST INSECTS. (3 Credits; 2 lectures, 1 lab.) A survey of important pest insects of the world, their current status and control. Each species will be taken as representative of a taxonomic group of real or potential pests. Interrelations of life-histories, biology, importance and control will be stressed.
Professor Morrison

5.13 EXTENSION METHODS

352-300A. COMMUNICATIONS — EXTENSION METHODS. (3 Credits; 2 lectures and 1 2-hr. lab.) An introductory survey course in communication techniques including journalism skills (newswriting,

design, etc.), strategies of change, and extension methods (meetings, panel discussions, etc.)
Professor Bachman

352-301B. COMMUNITY DEVELOPMENT. (3 Credits; 2 lectures and 1 lab.) The principles and processes of area resource development will be studied by readings, lectures, group discussions and case studies. Guest lecturers from organizations and agencies involved in community resource development will be invited to participate.
Professor Bachman

5.14 FOOD AND CONSUMER SCIENCES

377-201A. Perspectives in Food Science. (1 Credit; 1 lecture and one 2-hr. lab.) A survey of the interrelationships of the major disciplines concerned in Food Science studies. Involved staff members and practicing professionals selected to represent the major programs within the division will discuss the handling, processing and preparation of foods for human consumption from the viewpoint of the particular discipline.
Professor Beveridge and Staff

377-490D. FOOD AND CONSUMER SCIENCES PROJECT I. (3 Credits.) A project involving a review of the literature, experimental work and submission of a report. Assigned to students in their final year.
Coordinator, Major Professors, Staff

377-491D. FOOD AND CONSUMER SCIENCES PROJECT II. (5 Credits.) A project involving a review of the literature, experimental work and submission of a report. Assigned to students in their final year.
Coordinator, Major Professors, Staff

377-495D. FOOD AND CONSUMER SCIENCES SEMINAR I. (1 Credit.) Oral presentation of a selected topic within the field of Food and Consumer Sciences.
Staff

377-496D. FOOD AND CONSUMER SCIENCES SEMINAR II. (2 Credits.) Oral presentations of selected topics within the field of Food and Consumer Sciences.
Staff

377-497D. FOOD AND CONSUMER SCIENCES SEMINAR III. (3 Credits.) Oral presentations of selected topics within the field of Food and Consumer Sciences.
Staff

5.15 FOODS

376-214A. FOOD FUNDAMENTALS I. (3 Credits; 3 lectures and 1 lab.) An introduction to the practices followed in selection, preparation and conversion of foods with reference to the basic physical and chemical changes in the food constituents. Development of an awareness and a recognition of food quality standards.
Professor Fergusson

376-215B. FOOD FUNDAMENTALS II. (3 Credits; 3 lectures and 1 lab.; Prerequisite 214A Food Fundamentals I.) This course is an in-depth continuation of the material introduced in Food Fundamentals I. Through the use of literature reviews, term papers and oral presentation the students are trained to develop their own resources and understanding as well as expertise in the handling and processing of foods.
Professor Fergusson

376-312A. ADVANCED FOODS. (3 Credits; 3 lectures and 1 lab.; Prerequisite: Foods 214A.) The study of less common foods and their application. The preparation and service of foods appropriate to the formal menu. An understanding of meal management including planning, preparation, service and evaluation. Library research and the interpretation of food in relation to cultural, historical, sociological, economic or other factors.
Mrs. Flemming

376-340A. CHEMISTRY OF FOOD PRODUCTS I. (3 Credits; 3 lectures and 1 3-hr. lab.; Prerequisite: 332-232A.) A study of the composition, chemistry and technology of milk, meat and eggs. Analytical methods, processing procedures and market quality.
Professor Beveridge

376-341B. CHEMISTRY OF FOOD PRODUCTS II. (3 Credits; 3 lectures and 1 3-hr. lab.; Prerequisite: 332-232A.) A study of the composition, chemistry and technology of selected food products derived from cereals, oil seeds, sugar cane and sugar beet, sea weed and spice plants. Analytical methods, processing procedures and market quality.
Professor Beveridge

376-413B. PRODUCT DEVELOPMENT. (3 Credits; 3 lectures and 1 lab.) (Offered in alternate years, given in 1977-78.) Representatives from food industry will present research procedures used to develop new products. Students will prepare a report on the development of a new product, incorporating an analysis and evaluation of the production, processing equipment and sanitation requirements and a summary of consumer acceptance and market feasibility of the product.
Professors Idziak and Raymond

5.16 FRENCH

354-200A, B. FRENCH. (3 Credits; 3 lectures.) Practice in French for students who expect to work in Quebec Province: preparatory work for postgraduate students who intend to meet second language requirements in French. Emphasis will depend on needs of students enrolled.
Professor Gerols

354-300A, B. TECHNICAL FRENCH. (3 Credits; 3 lectures; Prerequisite: French 200A or B or equivalent.) An introduction to the language of Dietetics and Food Science. Oral practice and translation — topics will be selected in function of students' requirements.
Professor Gerols

354-302B. INTRODUCTION TO FRENCH CANADIAN LITERATURE. (3 Credits; 3 lectures; Prerequisite: French 354-200A or B or equivalent.) A survey of French Canadian Literature and Civilization. Study of two novels and two plays by modern French Canadian writers. This course will be conducted in French.
Professor Gerols

354-303A. AGRICULTURE ET RESSOURCES RENOUVELABLES DANS LES PAYS FRANCOPHONES. (3 Credits, 3 lectures; Prerequisite: French 354-200A or B, equivalent). A course designed for students in Agriculture who wish to acquire a basic technical vocabulary. This study of agricultural terminology will take place within a survey of Agriculture in French-speaking countires.
Professor Gerols

5.17 GENETICS

356-201A. INTRODUCTION TO GENETICS. (3 Credits; 3 lectures and 2 hr. lab.) The modern concepts of genetics are presented so that present and future developments in biology may be understood and appreciated.
Professor Lawson

356-202B. ADVANCED GENETICS. (3 Credits; 3 lectures; Prerequisite: Genetics 201A.) A detailed study of the genetic material, gene action, and population genetics.
Professor Lawson

356-203A. HEREDITY, EVOLUTION AND SOCIETY. (3 Credits; 3 lectures.) Inheritance, variation and evolution in plants, animals and man. Social implications of genetics and evolution.
Professor Lawson

Graduate courses available to undergraduates

Biology 177-670A or 177-770A. CYTOLOGY.

Biology. 177-671B or 177-771B. CYTOGENETICS.

Biology. 177-672B or 177-772B. MICROBIAL GENETICS.

Biology. 177-673A or 177-773A. MUTAGENESIS AND RADIATION BIOLOGY.

Biology 177-675B or 177-775B. STATISTICAL METHODS IN GENETICS.

5.18 HOME ECONOMICS

378-332A. FAMILY LIVING — DEVELOPMENT. (3 Credits; 3 lectures and 1 conf.; Prerequisite: Sociology 230A or Psychology 301A.) (Offered in alternate years, given in 1976-77.) A study of the development of the individual in the family from birth to old age. The recognition and understanding of variations in developmental environment and human potential.
Professor Shymko

378-333B. FAMILY LIVING — RELATIONSHIPS. (3 Credits; 3 lectures and 1 conf.; Prerequisite: Sociology 230A or Psychology 301A.) (Offered in alternate years, given in 1977-78.) An understanding of the role of the family in society. The interaction and interrelationships of family members of varying ages. An analysis of various family structures and problems.
Professor Shymko

5.19 HORTICULTURE

358-332D. LANDSCAPE ARCHITECTURE. (3 Credits; 1 3-hr. lab.; Prerequisite: Agricultural Engineering 336-214E.) (Offered in alternate years, given in 1977-78.) Description characteristics and identification of ornamental plants, nursery practices and care of plant material. A brief history of gardens and architecture. Landscape design, plans, sketches, drafting, and construction specifications, as applied to rural and urban homes, estates, parks and playgrounds, etc.
Mr. Perron

358-335B. FLORICULTURE. (3 Credits; 2 lectures and 1 2-hr. lab.; Prerequisite: Botany 346-353A.) (Offered in alternate years, given in 1976-77.) Construction and equipment of greenhouse and related structures. Principles involved in the propagation of all horticultural plants. Production of florists' crops including harvesting, storage and marketing, as well as costs of production and distribution.
Mr. Wigdor

358-338A. POMOLOGY I. (3 Credits; 2 lectures and 1 2-hr. lab. Prerequisite or concurrent: 346-353A). Small fruits. The biology of small fruit species, and the technology of small fruit production; major aspects, significant research, recent advances.
Professor Taper

358-339B. POMOLOGY II. (3 Credits; 2 lectures and 1 2-hr. lab. Prerequisite: 346-353A). Orchard Fruits. The biology of orchard species, and the technology of tree fruit production; major aspects, significant research, recent advances.
Professor Taper

358-430A. VEGETABLE PHYSIOLOGY I. (3 Credits; 2 lectures and 1 2-hr. lab.) Application of plant physiology and other sciences to the production of

vegetable crops. Original literature is used to illustrate the principles involved. Crops discussed include: tomato, pepper, eggplant, cucumber, muskmelon, squash, pumpkin, beans, peas, sweet corn, asparagus and rhubarb. Selected vegetable crops are grown by students in the laboratory to amplify lecture topics.
Professor Bible

358-431B. VEGETABLE PHYSIOLOGY II. (3 Credits; 2 lectures and 1 2-hr. lab.) Application of plant physiology and other sciences to the production of vegetable crops. Original literature is used to illustrate the principles involved. Crops discussed include: lettuce, celery, cabbage, brussels sprouts, cauliflower, broccoli, kale, radish, spinach, beet, onion, carrot, and potato. Selected vegetable crops are grown by students in the laboratory to amplify lecture topics.
Professor Bible

358-443A. STORAGE AND HANDLING OF HORTICULTURAL CROPS. (3 Credits; 2 lectures and 1 2-hr. lab.) The post-harvest chemistry and physiology of horticultural crops as they affect quality and marketability; handling methods at and after harvest; principles and practices in pre-cooling, storage, transportation and packaging.
Professor David

358-444B. FRUIT AND VEGETABLE PROCESSING. (3 Credits; 2 lectures and 1 2-hr. lab.) The principles and practices of food processing with emphasis on canning, freezing and dehydration, survey of the newer methods of food preservation such as the use of radiation and antibiotics; quality control, grading and sanitation are discussed.
Professor David

358-495D. SEMINAR. (2 Credits; 1 lab.)
Professor Taper and Staff

5.20 INSTITUTIONAL ADMINISTRATION

380-343A. ACCOUNTING AND COST CONTROL. (3 Credits; 1 lecture.) An introduction to the basic principles and concepts of responsability accounting and cost control, analysis and utilization of financial statements and control system data for decision making.
Professor Raymond

380-442A. ORGANIZATION AND MANAGEMENT. (3 Credits; 3 lectures.) An introduction to the theories and principles of management with emphasis on the function of management and its application in the food service/hospitality industry.
Professor Raymond

380-443B. FOOD SERVICE PRODUCTION MANAGEMENT. (4 Credits; 2 lectures and two 3-hr. labs.) Application of the principles and theories of Scientific Management to quantity food production and service. Development of standards and specifications related to purchasing food and food production equipment. Planning food facilities.
Professor Raymond

380-444A. PERSONNEL MANAGEMENT I. (3 Credits; 3 lectures.) The fundamentals of organizational behaviour, employee development and the leadership role.
Professor Neilson

380-445B. PERSONNEL MANAGEMENT II. (3 Credits; 3 lectures.) Organizational environment and the management of people at work. The nature of collective bargaining, the roles of unions and management.
Professor Neilson

5.21 MATHEMATICS

360-201A, B. STATISTICAL METHODS I. (3 Credits; 3 lectures and 1 2-hr. lab.) Measures of central tendency and dispersion; normal distribution; estimation and testing hypotheses; analysis of variance for simple experimental designs; regression and correlation; binomial, chi-square and Poisson distribution; non-parametric tests.
Professor Fanous

360-202A. CALCULUS. (3 Credits; 3 lectures and 1 conference). Partial differentiation; multiple integrals; vector calculus; infinite series.
Professor Barthakur

360-203A. DIGITAL COMPUTING I. (3 Credits; 3 lectures.) Introduction to Fortran Programming; numerical and non-numerical application of computers; computer oriented mathematics.

360-205B. DIFFERENTIAL EQUATIONS. (3 Credits; 3 lectures; Prerequisite: Mathematics 360-202A.) Techniques for solution of ordinary 1st and 2nd order equations; systems of equations; introduction to partial differential equations; applications to biological, chemical and engineering systems.
Professor Schuepp

360-206A. MATHEMATICAL METHODS IN ECOLOGY. (3 Credits; 3 lectures.) An introduction to mathematical tools used in building models of biological and ecological systems. These include probability theory, set theory, vector and matrix algebra, differential and difference equations.
Professors Barthakur and Schuepp

360-207A. LINEAR ALGEBRA AND VECTOR ANALYSIS. (4 Credits; 4 lectures.) Linear equations; vectors in R^n and C^n, linear transformations; matrices; vector spaces and subspaces; bases and dimensions; eigenvalues and eigenvectors; vector analysis.
Professor Kok

360-301A. NUMERICAL METHODS. (3 Credits; 3 lectures; Prerequisite: Mathematics 360-202A.) Numerical analysis and solution of problems arising

in environmental science. Linear programming. Practice and instruction on programmable desk calculators.
Professor Schuepp

360-303B. DIGITAL COMPUTING II. (3 Credits; 3 lectures; Prerequisite: Mathematics 360-203A.) More advanced Fortran, including the use of magnetic tapes and disks. Further applications of computers in simulation, linear programming, critical path techniques. An introduction to assembly language and computer organization.

360-401A. MATHEMATICAL STATISTICS I. (3 Credits; 3 lectures; Prerequisite: Mathematics 360-202A.) (Offered in alternate years, given in 1977-78.) Probability, random sampling; mathematical models; basic concepts of estimation and testing hypotheses; frequency distribution.
Professor Fanous

360-402A. MATHEMATICAL STATISTICS II. (3 Credits; 3 lectures; Prerequisite: Mathematics 360-401A.) (Offered in alternate years, given in 1976-77.) Correlation and regression; principles of testing hypotheses and estimation; small sample distributions; simple experimental designs; stratified sampling, sequential analysis.
Professor Fanous

Graduate courses available to undergraduates by permission

360-610A, B. STATISTICAL METHODS II. (3 Credits; 3 lectures and 1 2-hour lab.)
Professor M.A. Fanous

360-612B. MATHEMATICAL METHODS. (3 Credits; 3 hours to be arranged.)
Professors Schuepp and Kok

360-613B. TECHNIQUES OF STATISTICAL ANALYSIS. (3 Credits; 3 hours to be arranged.)
Professor M.A. Fanous

5.22 MICROBIOLOGY

362-200A. LABORATORY METHODS IN MICROBIOLOGY. (3 Credits; and two 3-hr. labs.) A practical application of techniques relating to morphology and physiology, enrichment, isolation and identification of selected classes of microorganisms.
Professor Idziak and Staff

362-230B. THE MICROBIAL WORLD. (3 Credits; 3 lectures and one 3-hr. lab.) The occurrence and importance of microorganisms (especially bacteria) in the biosphere. Principles governing growth, death and metabolic activities of microorganisms. An introduction to the microbiology of soil, water, plants, food, man and animals.
Professor MacLeod and Staff

362-331B. MICROBIAL ECOLOGY. (3 Credits; 3 lectures and one 3-hr. lab.) A detailed study of microorganisms in the animal, soil, fresh water and marine environments. Population regulation in pure and mixed cultures and in natural communities in homogeneous and discontinuous environments. Principles of biochemical ecology in relation to biodeterioration, pollution, biogeochemical cycles.
Professor Knowles and Staff

362-338B. PHYSIOLOGY OF MICROORGANISMS. (3 Credits; 3 lectures and one 3-hr. lab.) Principles of Microbial Physiology including cell structure, growth, nutrition, intermediary metabolism, catabolic and anabolic reactions. The laboratory includes isolation, induction and assay of selected enzymes plus special individual projects to illustrate various aspects of physiology.
Professor Ingram and Staff

362-341A. MECHANISMS OF PATHOGENICITY. (3 Credits; 2 lectures, 1 conference, one 3-hr. lab.) (Offered in alternate years, given in 1976-77.) A study of the means by which bacteria cause disease in man and animals. Includes response of host to invading bacteria, modes of action of exo- and endotoxins, modes of action of antibiotic resistance in bacteria.
Professor DeVoe

362-437D. FRONTIERS IN MICROBIOLOGY. (1 Credit; irregular meetings.) This course involves the preparation of a comprehensive term paper based on a search of the literature on a topic assigned to include an area of recent development new to the student.
Staff

362-438A. IMMUNOLOGY. (3 Credits; 2 lectures and 1 3-hr. lab.) A review of the host defence mechanisms with particular reference to antigen-antibody reactions. The nature of antigens and antibodies, the mechanism of antibody formation, polymorphism, hypersensitivity and transplantation are discussed.
Professor C.E. Tanner

362-442A. FOOD MICROBIOLOGY AND SANITATION. (3 Credits; 3 lectures and 1 3-hr. lab.) Consideration of microorganisms, and their products, of importance to the food industry. These will be discussed in terms of production of foods, preservation and processing of foods, facility sanitation and waste disposal, potential for causing food poisoning outbreaks.
Professor Idziak

362-491D. PROJECT. (3 Credits; equiv. 2 3-hr. labs.) A project involving laboratory work. May be elected by any final year students other than Microbiology Major.
Staff

362-492D. PROJECT. (5 Credits; equiv. 3 3-hr. labs.) A project involving laboratory work assigned each Microbiology Major student in his final year.
Staff

362-495D. SEMINAR. (3 Credits; equivalent of 1 lecture.)
Staff

Graduate courses available to undergraduates

362-761D. SOIL MICROBIOLOGY. (6 Credits; 2 lectures.) (Offered in alternate years, given in 1976-77.)
Professor Knowles

362-762D. MICROBIAL BIOCHEMISTRY. (6 Credits; 2 lectures.) (Offered in alternate years, given in 1975-76.)
Professor MacLeod

362-764A. READING AND CONFERENCE. (3 Credits; 2 conferences.) (Offered in alternate years, given in 1977-78.)
Staff

362-765B. READING AND CONFERENCE. (3 Credits; 2 conferences.) (Offered in alternate years, given in 1977-78.)
Staff

362-766A. READING AND CONFERENCE. (3 Credits; 2 conferences.) (Offered in alternate years, given in 1976-77.)
Staff

362-767B. READING AND CONFERENCE. (3 Credits; 2 conferences.) (Offered in alternate years, given in 1976-77.)
Staff

362-769D. TOPICS IN MICROBIAL PHYSIOLOGY. (6 Credits; 2 lectures.) (Offered in alternate years, given in 1976-77.)
Staff

5.23 NUTRITION AND DIETETICS

382-212B. BASIC NUTRITION. (3 Credits; 3 lectures.) The scientific basis for the dietary recommendations for energy, protein, minerals and vitamins for adults. This course is intended for students who wish to take a single course in human nutrition.
Professor Farmer

382-305A. NORMAL HUMAN NUTRITION. (3 Credits; 3 lectures.) (Prerequisites: 342-331B or 382-212B.) Application of known nutrient requirements in the feeding of infants, children, adolescents, women during pregnancy and lactation, and the elderly. Natural toxicants, pesticide residues, health foods and food additives will be discussed for nutrition education of the public. This course is for students majoring in Home Economics and Dietetics.
Professor Farmer

382-435B. APPLIED HUMAN NUTRITION. (3 Credits; 3 lectures.) Class projects include diet surveys, computer dietary calculations, interviewing for diet counselling, and the preparation of posters, puppets, food models, games, exhibits, videotapes, etc. Lecture topics include nutritional status, problems of world feeding and the results of the Nutrition Canada Survey. This course is planned for students majoring in Dietetics.
Professors Farmer and Maconochie

382-441A. DIET THERAPY I. (3 Credits; 2 lectures and 1 lab.) Dietary modification in treatment of pathological conditions including gastro-intestinal, liver, renal, circulatory and metabolic disorders. Laboratory periods for lectures in hospitals.
Professor Maconochie

382-442B. DIET THERAPY II. (3 Credits; 2 lectures and 1 lab.) Seminars in which recent developments in dietetics are presented and discussed by the students. Visits to clinics, hospital dietary departments and presentation of a case study. Laboratory periods for the preparation and discussion of special diets.
Professor Maconochie

5.24 PHYSICS

338-112A. INTRODUCTORY PHYSICS I. (3 Credits; 3 lectures and one 2-hr. lab.) Accelerated motion. Newton's Laws. Force, work and energy, power; momentum. Conservation principles. Circular motion. Simple harmonic motion. Waves and sound. Gases and gas laws.

338-114B. INTRODUCTORY PHYSICS II. (3 Credits; 3 lectures and one 2-hr. lab.) Electric and magnetic properties of matter: electrostatics, electric currents, the link between electric and magnetic phenomena. Matter on the smallest scale: Bohr atom, quantum effects, the nucleus, radioactivity.

338-201A. INTRODUCTORY METEOROLOGY. (3 Credits; 3 lectures.) The atmosphere — its properties (structure, motion, geostrophic, gradient), and thermodynamics (stability, dry and moist). Clouds and precipitation. Air masses and fronts; synoptic analysis. Radiation and the global radiation budget; large-scale wind systems.
Professor Douglas

338-301B. BIOTHERMODYNAMICS. (3 Credits; 3 lectures and 1 conference.) The laws of thermodynamics and their application to living systems.
Professor Barthakur

338-303A. PRINCIPLES OF ATOMIC AND NUCLEAR PHYSICS. (3 Credits; 3 lectures and 1 conference.) This course deals with contributions made by the 20th century physical sciences towards understanding of the atomic concept; classical and quantum-mechanical models of molecules, atoms and nuclei; wave- and corpuscular-theory of electro-magnetic radiation; particle-wave duality; natural and artificial radioactivity.
Professor Schuepp

338-304B. PHYSICAL BASIS OF CLIMATE. (3 Credits; 3 lectures and 1 conference; Prerequisite: 338-201A.) (Offered in alternate years, given in

1977-78.) Global energetics; radiation, latent heat and the hydrologic cycle. General circulation; semi-permanent, and migratory centres of high and low pressure; air-masses and fronts. Regional circulations (e.g. monsoon). Local circulations. Factors affecting microclimate.
Professor Douglas

338-308B. BIOMETEOROLOGY. (3 Credits; 3 lectures and 1 conference; Prerequisite: Physics 338-201A.) (Offered in alternate years, given in 1976-77.) Radiative, convective and evaporative energy exchange on the microscale. Applications to ground, crop and forest, to individual members of the plant/forest community, and to animals. Plants and animals as radiators, convectors, evaporators. Hazards (heat loads, frost, etc.). Growing-degree-days and other integrative indicators.
Professor Douglas and Staff

338-404B. RADIATION BIOPHYSICS. (3 Credits; 3 lectures.) (Offered in alternate years, given in 1976-77.) Electromagnetic radiation, interaction of radiation with matter; radiation dosimetry; biological effects of ionizing radiation; target theory; principles of radiation protection; bioluminescence; biological action of light; x-ray diffraction of protein and nucleic acids. (This is intended to be an interdisciplinary course, with some lectures supplied by the Biologists.)
Professor Schuepp and Guest Lecturers

338-405B. ELEMENTARY TRACER TECHNIQUES. (3 Credits; 3 lectures and 1 3-hr. lab.; Prerequisite: Physics 338-303A or equivalent.) Operation and theory of various radiation detectors; ionization chambers, G-M counter, proportional counter, solid and liquid scintillation counters, and autoradiography; counting statistics, measurements of environmental radioactivity; practice of radiological safety.
Professor Barthakur

5.25 PLANT PATHOLOGY

366-301B. INTRODUCTORY MYCOLOGY. (3 Credits; 2 lectures and 1 3-hr. lab.) A lecture and laboratory course dealing with elements of the biology and physiology of fungi; their cultural characteristics and the identification of selected species.
Professor Estey

366-355A, B. SPECIAL TOPIC IN PLANT PATHOLOGY. (2 Credits; 1 conference.) A course of independent study by the student, guided by a plant pathologist who has specialized in the general area of the chosen topic.
Staff

366-402A. GENERAL PLANT PATHOLOGY. (3 Credits; 2 lectures and 1 3-hr. lab.) A study of common diseases, with emphasis on disease expression, causation, ecology, and principles underlying plant disease control. An introduction to methods of studying plant diseases in the laboratory and field.
Professor Viswanathan

366-403B. DISEASES OF FIELD AND FOREST CROPS. (3 Credits; 2 lectures and 1 3-hr. lab.; Prerequisite: Plant Pathology 402A.) (Offered in alternate years, given in 1977-78.) The distribution, economic importance, symptoms, causes, and principles underlying control of diseases of major field and forest crops.
Professor Viswanathan

366-404B. DISEASES OF HORTICULTURAL CROPS. (3 Credits; 2 lectures and 1 3-hr. lab.; Prerequisite: Plant Pathology 402A.) (Offered in alternate years, given in 1976-77.) The distribution, economic importance, symptoms, causes, and principles underlying control of diseases of major horticultural crops.
Professor Viswanathan

366-405A. INTERMEDIATE MYCOLOGY. (3 Credits; 2 lectures and 1 3-hr. lab.) A lecture and laboratory study of the higher fungi, and others of general interest or importance, that are not dealt with in the introductory course.
Professor Estey

366-406A. VIROLOGY. (3 Credits; 2 lectures and 1 3-hr. lab.) A study of the viruses affecting animals, bacteria and plants, with main emphasis on the chemical and physical properties of viruses; virus infection; and virus epidemiology. Laboratory culture of viruses, their isolation, and characterization by chemical and physical methods. Priority given to students who require this course for their major.
Professor Peterson

366-490D. PROJECT. (3 Credits; 1 lecture and 1 3-hr. lab.) Each student is assigned a plant pathological or botanical problem entailing individual investigation, preparation of a report in publication form, and oral presentation of a scientific paper.
Staff

366-496D. SEMINAR. (2 Credits; 1 lecture.) Written and oral presentation of critical reviews of important topics and current research articles for group discussion.
Staff

Graduate courses available to undergraduates by permission

366-607B. PLANT VIRUS DISEASES. (3 Credits; 2 lectures and 1 lab.)
Professor Peterson

366-680A. NEMATOLOGY. (3 Credits; 2 lectures and 1 lab.)
Professor Estey

366-681B. NEMATODE DISEASES OF PLANTS. (3 Credits; 2 lectures and 1 lab.)
Professor Estey

5.26 PSYCHOLOGY

368-301A. PSYCHOLOGY. (3 Credits; 3 lectures.) A study of the general characteristics of physical, social, emotional and intellectual development, the psychology of learning, and the growth and development of personality with special emphasis on the problems of adolescence.
Professor Shymko

368-350B. HUMAN SEXUAL DEVELOPMENT. (3 Credits; 2 lectures and one 2-hr. conference.) An analysis of available research related to human sexuality from the areas of developmental psychology, sociology, and medicine. The course will consider social issues associated with sexuality from an historical and psychosociological viewpoint.
Professor Shymko

5.27 RENEWABLE RESOURCES DEVELOPMENT

375-200B. CONSERVATION. (3 Credits; 3 lectures.) An ecological, economic, ethical and political evaluation of man's effect on his environment and the ultimate values of his ingenuity and present rate of progress.
Professor Bider

375-300B. RENEWABLE RESOURCES. (3 Credits; 3 lectures.) The production, exploitation, and utilization of agricultural, forestry, fisheries and wildlife resources. The geography of the resources as well as the populations which exploit them and the markets which consume them.
Professor Bider and other Staff

375-333A. PHYSICAL AND BIOLOGICAL ASPECTS OF POLLUTION I. (3 Credits; 3 lectures.) The environmental contaminants which cause pollution; sources, amounts and transport of pollutants in water, air and soil; waste disposal; genetic effects of pollutants.
Professor Warkentin and Others

375-334B. PHYSICAL AND BIOLOGICAL ASPECTS OF POLLUTION II. (3 Credits; 3 lectures.) Specific pollutants in agricultural production; legislation for pollution control; ecology and energy use; economic and social aspects of pollution control.
Professor Warkentin and others

375-401A. FISHERIES AND WILDLIFE MANAGEMENT. (4 credits; 3 lectures, one 2-hr. lab and one week field laboratory prior to fall term.) Principles of fisheries and wildlife management are considered and current practices of research and management are discussed.
Professors Titman and Bider

375-410B. WILDLIFE ECOLOGY. (3 Credits; 3 lectures, 2 assignments, and occasional field trips.) Principles of animal ecology as they relate particularly to North American birds and mammals. Topics covered include species distribution, population dynamics, predation, geographic speciation, habitat selection and social behaviour.
Professor Titman

375-411B. RECREATION RESOURCE MANAGEMENT. (3 Credits; 3 lectures.) Outdoor recreation management principles as related to regional resources, needs, programs, opportunities, policies and administration in the public and private sectors, economic aspects.
Professor Fillmore

375-414A. POLICY AND POLITICS OF RENEWABLE RESOURCES DEVELOPMENT. (3 Credits; 2 lectures and one conference.) This course will answer the following questions: How are policies made and implemented? Who makes policy decisions? How are desirable goals achieved within the political system?
Professor Fillmore

375-415A. LAW AND THE PROTECTION OF FAUNA AND FLORA. (2 Credits: 2 lectures.) A study of the various federal, provincial and municipal laws affecting wildlife habitat. Topics include: laws to protect wild birds and animals; the regulation of hunting; legal protection of trees and flowers, sanctuaries, reserves, parks; techniques of acquiring and financing desirable land, property owner rights.
D. Bunker, R.W. Carswell and D. Guthrie

375-420A. TOPICS IN ORNITHOLOGY. (3 Credits; 3 lectures and occasional field trips; Prerequisite: Zoology 349-307A or permission of instructor.) Taxonomic relationships and evolution of birds will be outlined. Zoogeography, reproduction, migration and population processes of North American birds will be examined.
Professor Titman

375-437B. ASSESSING ENVIRONMENTAL IMPACT. (2 Credits; 2 lectures.) The course will be divided into two parts. The first part will involve an examination of the theories and procedures of various methods of assessing environmental impact. The second part of the course will involve an examination of the environmental impact statements of programs and projects already in existence to examine the accuracy with which they were able to predict consequences and attenuate undesirable effects.
Professor Fillmore

375-445A. SPECIAL TOPICS IN RENEWABLE RESOURCES I. (2 Credits.) Students will pursue topics that are not otherwise available in formal courses. An individualized course of studies will be followed under supervision of a member of staff qualified in the appropriate discipline or area selected by the student.
Staff

375-446B. Same description as 375-445A.

375-450A, B. SPECIAL TOPICS IN RENEWABLE RESOURCES DEVELOPMENT. (2 Credits.) Students will pursue topics that are not otherwise available in formal courses. An individualized course of studies will be followed under the supervision of a member of staff qualified in the appropriate discipline or area.
Staff

375-491D. SEMINAR. (2 Credits; 1 lecture and 1 lab.) Each student is assigned a renewable resource problem entailing an individual investigation, the preparation of a report in publication form, and an oral presentation as a scientific paper.
Major Professors and Staff

375-496D. PROJECT I. (3 Credits; 1 lab.) Development of research techniques through selection of hypotheses, review of literature, original research and formulation of conclusions in an area of renewable resource development.
Coordinator, Major Professor and Staff

375-497D. PROJECT II. (5 Credits; 2 labs.) Development of research techniques through selection of hypotheses, review of literature, research and formulation of conclusions in an area of renewable resource development.
Coordinator, Major Professor and Staff

5.28 SOCIOLOGY

370-230A. INTRODUCTORY SOCIOLOGY: SOCIETY TODAY. (3 Credits; 3 lectures.) The study of man in his relationship to human groups and institutions. The patterns and arrangements of human societies, their development and change. Major theoretical views of sociology and basic sociological concepts related to contemporary conditions and problems.
Professor Chevrier

370-240B. THE SOCIAL DEVELOPMENT OF THE INDIVIDUAL. (3 Credits; 3 lectures; Prerequisite: Sociology 370-230A.) The social nature of man. Language and communication. Socialization. Self, personality and social character in the sociological perspective.
Professor Chevrier

370-341A. THE URBAN COMMUNITY. (3 Credits; 3 lectures; Prerequisite: Sociology 370-230A.) Population phenomena and their implications for the organization of society. Human ecology. The structure of urban communities in industrial and developing countries. Urban planning. City government. Social institutions in the urban setting.
Professor Chevrier

370-342B. SOCIAL PROCESSES AND SOCIAL INSTITUTIONS. (3 Credits; 3 lectures; Prerequisite: Sociology 370-230A.) (Given in 1977-78.) Sociological theories of society. Systems of stratification, classes and mobility. Social control and the maintenance of order. Bureaucracy and modern organization. Power, authority and the political order. The realm of ideas: education, science, religion and ideologies. Social change and the future of society.
Professor Chevrier

370-350A. RESEARCH METHODS FOR SOCIAL SURVEYS. (3 Credits; 2 lectures; Prerequisites: 360-201A and 360-203A or equivalents.) Methodology in social research. Research design. Sampling. Social measurement. Data collection, analysis and interpretation. The research report.
Professor Chevrier

370-360B. RURAL SOCIOLOGY. (3 Credits; 3 lectures; Prerequisite: Sociology 370-230A.) Settlement patterns and their social significance. The major social systems of the rural community. Farms and Farmers. Government policies. Rural life in traditional societies and in urbanized societies.
Professor Chevrier

5.29 SOIL SCIENCE

372-210A. PRINCIPLES OF SOIL SCIENCE. (3 Credits; 3 lectures and 1 3-hr. lab.) Origin, development and classification of soils, chemical and physical properties related to crop production, soil conservation and land use.
Professor Mackenzie

372-230B. THE PHYSICAL ENVIRONMENT. (3 Credits; 3 lectures and 1 3-hr. lab.) Description and classification of soils, geomorphology and landscape, organic matter, water and nutrients. The hydrologic cycle, surface drainage, ground water, water quality. Energy balance at the ground surface, evaporation, temperature regimes, freezing temperatures, micro-climate, meteorological records.
Professor Warkentin

372-250A. GEOLOGY AND GEOMORPHOLOGY. (3 Credits; 3 lectures and 1 3-hr. lab.) (Offered in alternate years, given in 1977-78.) Geology, petrology and stratigraphy of the common igneous, sedimentary and metamorphic rocks. Principles of geomorphology related to landscape features and their interpretation. Weathering, mass wasting, erosion and deposition.

372-310B. SOIL CHEMISTRY AND FERTILITY. (3 Credits; 3 lectures and one lab.; Prerequisite: Soil Science 372-210A.) Chemical composition of soils, origin and chemistry of plant nutrients, influence of soil properties on nutrient absorption and plant growth, instrumental analysis, other analytical techniques.
Professor Mackenzie

372-321A. PRINCIPLES OF SOIL RATING. (3 Credits; 3 lectures.) A study of soil as a main constraint in its utilization by man for agriculture, forestry, recreation, wildlife, urban development, industrialization, engineering projects, social and economic

assets. Review and evaluation of various systems of rating soils for the aforementioned uses.
Professor Millette

372-325B. PRINCIPLES OF LAND PLANNING. (2 Credits; one 2-hr. lab.) A study of the principles involved in land planning. Includes an historical review, discussion of ecological, social, economic, political and legal factors involved in making decisions for the best and most appropriate use of land. Study of specific cases, field trips or visits or group discussion.
Professor Millette

372-330B. PHYSICAL PROPERTIES OF SOILS. (3 Credits; 2 lectures and 1 3-hr. lab.) Soil structure; fluxes of water, heat, gases and solids in soils; physical properties and plant growth; applications to soil dynamics.
Professor Warkentin

372-420A. SOIL SURVEY. (3 Credits; lectures and two weeks of soil mapping before term begins.) Technique of taking soil descriptions and establishing mapping units. Preparation of soil, land use and other interpretation maps. Interpretation of aerial photographs.
Professor Millette

372-491A. PROJECT I. (3 Credits; 2 labs.) Studies of selected problems involving laboratory and library research.
Staff

372-493B. PROJECT II. (3 Credits; 2 labs.) Studies of selected problems involving laboratory and library research.
Staff

372-496D. SEMINAR. (2 Credits; 1 lecture.) Discussions of selected topics in Soil Science.
Staff

5.30 TEXTILES AND CLOTHING

386-220B. CONTEMPORARY CLOTHING CONSTRUCTION. (3 Credits; 2 labs.) Principles and techniques of garment construction. The application of these principles in the construction of garments using the commercial pattern; and in the making of a sample laboratory manual.
Mrs. Martin

386-232A. TEXTILES — NATURAL AND MAN-MADE FIBRES. (3 Credits; 3 lectures and 1 lab.) A consumer-oriented study of the history, properties, characteristics and performance limitations of natural and man-made fibres; yarns; fabric constructions; finishings and finishes as well as mixtures and blends.
Mrs. Murphy

386-320A. ADVANCED CLOTHING CONSTRUCTION. (3 Credits; 2 labs.; Prerequisite: Textiles and Clothing 386-220B.) Principles and techniques of advanced clothing and their application in the construction of custom tailored or semi-tailored garments while exploring the structural potential of contemporary fabrics.
Mrs. Martin

386-321B. APPAREL DESIGN. (3 Credits; 2 labs.) Practical study of garment design by the Flat Pattern method. An introduction of drafting and draping. Experiments in applied design through mediums such as batik, tie-dying and creative stitchery.
Mrs. Murphy

386-322B. PSYCHOLOGICAL AND SOCIAL BASES OF CLOTHING. (3 Credits; 3 lectures.) (Offered in alternate years, given in 1976-77.) A study of the function and use of clothing at different stages in the life cycle of the individual. The use of colour and styling as an expression of personality. Historical and contemporary perspectives of dress as a reflection of social rank and life styles.
Mrs. Murphy

386-433B. TEXTILES CHEMISTRY. (3 Credits; 2 lectures and one lab.) An introduction to the chemistry of cellulose, protein and synthetic fibres; dye stuffs and dyeing; finishing chemicals and their uses.
Professors Anastassiadis and Henneberry

5.31 WOODLAND RESOURCES

374-200B. FOREST RESOURCES. (3 Credits; 3 lectures and project.) A survey of the contribution of the forest resource to the national economy. An overview of world forests, the history and development of forestry, forest influences, forest industry, management, harvesting methods, and mechanization systems. Discussions of research, education, multiple use and environmental forestry practices with guest lecturers.
Professor Jones

374-210A, C. METHODS OF ENVIRONMENTAL INTERPRETATION. (3 Credits; 2 lectures and 1 lab.) (Summer session 3 weeks; 2-hr. lecture and field trip each day.) For people interested in conducting effective field study trips; organization and operation of studies, class preparation, field methods, basic information and sources, functions of tour guides, utilization of different study areas, special problems and possibilities for follow-up class work. Field work at the Morgan Arboretum.
Professor Fillmore

374-330A. PRIVATE FORESTRY. (3 Credits; 3 lectures and 1 3-hr. lab.) Trees and forests of eastern Canada; forest ecology; products; multiple use potentials; silviculture, management, and marketing; diverse objectives of forest owners, management alternatives; relation to agriculture; analysis of management problems; present and future socio-economic significance of this segment of land resource.
Professor MacArthur

374-440B. SILVICULTURE. (3 Credits; 2 lectures; 1 conference; Desirable Prerequisites: Botany 346-451A, Woodland Resources 374-330A; or consent of instructor.) A generalized treatment of applied forest ecology and current silvicultural practices with emphasis on Eastern Canadian conditions. The principles of regeneration, nursery practice, planting, tending and harvesting of natural and artificial stands.
Professor MacArthur

5.32 ZOOLOGY

349-203B. INVERTEBRATE ZOOLOGY. (3 Credits; 2 lectures, 1 3-hr. lab. and conference.) The biology, structure, physiology and evolution of the invertebrates, exclusive of insects.
Professor Morrison and Staff

349-206B. HISTOLOGICAL TECHNIQUES IN ZOOLOGY. (3 Credits; 1 lecture, 1 3-hr. lab. and project.) The preparation of histological slides and the techniques of making scientific illustrations. Priority given to students who require this course for their major.
Professor McFarlane

349-307A. NATURAL HISTORY OF THE VERTEBRATES. (3 Credits; 3 lectures and 1 3-hr. lab.) (Offered in alternate years, given in 1977-78.) A general review of the higher taxonomic groups of vertebrates along with the prochordates. Major emphasis is on the diagnostic characters which serve to separate the groups, and also their evolution and distribution.
Professor Bider

349-308A. COMPARATIVE MORPHOLOGY OF THE VERTEBRATES. (3 Credits; 2 lectures, 1 3-hr. lab. and project.) (Offered in alternate years, given in 1976-77.) An overview of the morphological adaptations, and their evolution, of the vertebrates. Major differences between vertebrates and invertebrates; the early embryology, supporting systems including the axial skeletal system and paired structures; muscular, digestive, and nervous systems; sensory systems of vision, acoustics, and taste, the endocrines; and the tegumentary system.
Professor Ali-Khan

349-310A. COMPARATIVE ETHOLOGY. (3 Credits; 2 lectures, 1 3-hr. lab.) Study of the behaviour of invertebrate and vertebrate animals, including innate behaviour, learning, motivation, agonistic behaviour, rhythms, social organization and communication.
Professors Hartsock, Stewart and Titman.

349-312A. PRINCIPLES OF SYSTEMATIC ZOOLOGY I. (3 Credits; 3 lectures, and assignments.) (Offered in alternate years, given in 1977-78.) Introduction to animal taxonomy; 'the New Systematics'; the species concept; variation; speciation; reproductive isolation; evolution; phylogeny; phenetics: zoological nomenclature; methodology, etc.
Professors Kevan and Vickery

349-313B. PRINCIPLES OF SYSTEMATIC ZOOLOGY II. (3 Credits; 3 lectures and project; Prerequisite: Zoology 349-312A.) (Offered in alternate years, given in 1977-78.) Present and past factors affecting the areal, regional and world distribution of animal groups and species, with particular reference to the post-Mesozoic fauna; related aspects of evolutionary and phylogenetic theory, e.g., adaptation, mimicry, parallel and convergent evolution, etc., 'Continental Drift', climatic and topographical variation, dispersal, etc.
Professors Kevan and Vickery

349-315A. BIOLOGY OF INLAND WATERS I. (3 Credits; 2 lectures and 1 3-hr. lab.; Prerequisite: Any basic Botany or Zoology.) General nature and history of limnology; divisions of inland waters; properties of fresh water; habitats; zones; nutrient cycles; biota; adaptations; seasonal variation; distributions; pollution; succession and evolution of fresh water environment. Some field excursions will be arranged.
Professor Ali-Khan

349-316B. BIOLOGY OF INLAND WATERS II. (3 Credits; 2 lectures and 1 3-hr. lab.; Prerequisite: Zoology 349-315A.) (Offered in alternate years, given in 1977-78.) A continuation of Biology of Inland Waters I, covering in greater detail those areas related more particularly to animal life, with particular reference to invertebrates (especially insects); faunal groups according to systematic position and habitat; identification; distribution within water bodies; locomotion, food relations; effects of environment; indicators of pollution.
Professor Ali-Khan

349-418A. TERRESTRIAL ANIMAL ECOLOGY I. (3 Credits; 2 lectures, 1 3-hr. lab. and one week field laboratory prior to fall term; Prerequisite: Biology 344-204B.) A more advanced course in animal ecology considering concepts and methods in physiological and population ecology by using case studies from land environments.
Professor Stewart

349-419B. TERRESTRIAL ANIMAL ECOLOGY II. (3 Credits; 2 lectures and 2 conferences; Prerequisite: Zoology 349-418A.) A more advanced course considering concepts and methods in synecology using case studies, mainly from land environments.
Professor Stewart

349-422A. PARASITOLOGY I. (3 Credits; 2 lectures and 2 3-hr. labs.; Prerequisite: Biology 344-200A.) (Offered in alternate years, given in 1976-77.) The systematics, morphology, biology and ecology of the parasitic protozoa and flatworms with emphasis on economically and medically important species.
Professor Meerovitch

349-423B. PARASITOLOGY II. (3 Credits; 2 lectures and 1 3-hr. lab.; Prerequisite: Zoology 349-422A.) (Offered in alternate years, given in 1976-77.) The systematics, morphology, biology and ecology of the parasitic roundworms and arthropods with emphasis on economically and medically important species.
Professor Meerovitch

349-490D. PROJECT. (3 Credits; 1 lab.) A problem involving literature review and private investigation will be allotted to each student taking the course.
Prof. Stewart and Staff

349-491D. PROJECT. (5 Credits; 1 lab.) A problem involving literature review and private investigation will be allotted to each student taking the course.
Professor Stewart and Staff

349-496D. SEMINAR AND LITERATURE REVIEW. (3 Credits; 2 lectures.) Presentation of papers on, and discussion of, topics from selected fields of Zoology (including Entomology) and of research reports; reviews of recent literature.
Professor Hill and Staff

6 GRAD PROGRAMS

Graduate work, under the Faculty of Graduate Studies and Research, McGill University, Montreal, may be undertaken at Macdonald College, in Agricultural Engineering, Agronomy, Animal Science (Animal Breeding, Animal Physiology or Nutrition), Chemistry, Economics, Entomology, Genetics, Horticulture, Microbiology, Parasitology, Plant Pathology, Soil Science and Wildlife Biology. The advanced courses of study offered lead to the degrees of Master of Science and Doctor of Philosophy.

A number of scholarships and student assistantships are available.

The Faculty of Graduate Studies and Research issues an Announcement giving full information regarding graduate courses, and scholarships, theses, registration, etc., in connection therewith, which will be sent on application to the Dean of the Faculty of Graduate Studies and Research, McGill University, Montreal or to the Registrar, Macdonald College, Que.

7 DIPLOMA IN AGRICULTURE

Director — Professor N.C. Lawson

In this two-year program, the practical application of the principles of agricultural science is emphasized. The objectives of the program are:

— To provide the student with the best possible instruction in the agricultural practices of eastern Canada.

— To develop in the student an understanding of the problems of agriculture and provide the knowledge required for an intelligent approach to their solution.

— To prepare the student for leadership in the community.

The graduates of the Diploma program find careers in agricultural production and its industries closely related to agriculture.

The work of the first year is taken by all students in common. In the second year certain courses are taken by all students, but each student must choose, in addition, a minimum number of courses from a list of elective courses. The student must indicate his choice on the registration form at the beginning of the second year, and is strongly advised to make his choice before the end of his first year. In the event that too few students select an elective course in any year, that course may not be given in that year.

7.1 ENTRANCE REQUIREMENTS

1. Students must have passed their seventeenth birthday before entering the program.
2. Students should have a good practical knowledge of farming, either coming from a farm or having worked for at least one full season on an approved Eastern Canadian farm.
3. The education requirement is the Grade XI Quebec High School Leaving Certificate or its equivalent with passes in a minimum of eight papers which must include at least one mathematics and one science subject.
4. Students of mature years who do not meet the academic requirements and who intend to make agriculture a career may apply for admission. Their application will be considered in an interview with the Diploma Course Committee.

Information on other matters of concern to Diploma students is found under the following headings (see index): Registration, Residence, Conduct and Discipline, Fees, Health Service.

7.2 SYLLABUS

Diploma Program

FIRST YEAR

TERM 1

COURSE NUMBER	SUBJECT	CREDITS
336-D12A	Agricultural Engineering Machinery	3
340-D13A	Hay and Pasture Crops	2
342-D12A	Animal Anatomy and Physiology	2
344-D11A	Agricultural Botany	2
344-D13A	Zoology	2
332-D11A	Elementary Chemistry	2
348-D15D	English	2
348-D15A	Algebra, Geometry and Trigonometry	2
372-D11A	Soils	2

TERM 2

336-D12B	Ag. Eng. — Shopwork and Metallurgy	2
342-D13B	Applied Animal Nutrition or Feeds and Feeding	2
342-D11B	Principles of Livestock Improvement	2
334-D17B	Economics of Canadian Agriculture	2
348-D15D	English	1
358-D15B	General Horticulture	2
362-D11B	Microbiology	1
338-D16B	Physics	1
340-D19B	Grains and Miscellaneous Crops	2
	Total	34

SECOND YEAR

TERM 1

Required Courses

COURSE NUMBER	SUBJECT	CREDITS
336-D22A	Land Measurement and Water Control	3
334-D28D	Farm Management	2
352-D21A	Extension Methods	2
330-D26D	Farm Project	1
340-D24A	Weeds and Weed Control	2

Electives (Minimum of 6 Credits)

374-D21A	Farm Forestry	2
342-D28A	Dairy Cattle Production	3
342-D29A	Beef Cattle and Sheep Production	3
358-D22A	Vegetable Cash Crops	2
358-D23A	Fruit Cash Crops	2
338-D21A	Agricultural Weather and Climate	2
340-D25B	Seed Production, Processing and Analysis	2

TERM 2

Required Courses

344-D21B	Pest Control	2
344-D28D	Farm Management (Cont'd)	2
340-D27B	Crop Management	2
330-D26D	Farm Project (Cont'd)	1

Electives (Minimum of 6 credits)

336-D23B	Structures, Environments and Materials Handling	3
342-D30B	Swine Production	3
342-D31B	Poultry Production	3
358-D21B	Commercial Handling of Horticultural Products	2
358-D24B	Commercial Ornamental Horticulture	2
350-D22B	Bees and Beekeeping	2
	Minimum	29

7.3 DESCRIPTION OF DIPLOMA COURSES

Courses designated "A" are given in first term only.

Courses designated "B" are given in the second term only.

Courses designated "D" continue throughout both terms.

AGRICULTURAL ENGINEERING

336-D12A. AGRICULTURAL POWER AND MACHINERY. (3 Credits; 3 lectures and 1 3-hr. lab.) Principles of tillage, planting, fertilizer distribution, crop protection, harvesting and transport. Agricultural prime movers and power transmission; mechanical and hydraulic systems. Traction, trafficability and mobility. Operator comfort, efficiency and safety. Machinery maintenance. Cost analysis and machinery management. Use of Nebraska Test Reports.
Professor Norris

336-D13B. AGRICULTURAL SHOP PRACTICE. (2 Credits; 3 lectures and 1 2-hr. lab.) Principles and practice in material cutting, shaping, forming, joining, fabrication. Practical exercises in welding, soldering, riveting, gluing; use of nails, bolts, screws. Operation of hand power tools. Metallurgy and properties of materials. Principles and applications of protective coatings.
Professor Norris and Staff

336-D22A. LAND MEASUREMENT AND WATER CONTROL. (3 Credits; 3 lectures and 2 2-hr. labs.) Surveying measurements and computation; land drainage; water supply; waste management.
Professor Broughton

336-D23B. STRUCTURES, ENVIRONMENT AND MATERIALS HANDLING. (3 Credits; 3 lectures and 1 3-hr. lab.) Agricultural structures for animal housing and crop storage; environmental control; agricultural materials handling; agricultural application of electric power and control.
Professor Ogilvie and Staff

AGRONOMY

340-D13A. HAY AND PASTURE CROPS. (2 Credits; 3 lectures and 1 2-hr. lab.) Hay and pasture crops from the standpoint of their importance, variety, culture, management preservation and seed production.

340-D19B. GRAIN AND MISCELLANEOUS CROPS. (2 Credits; 3 lectures and 1 2-hr. lab.) These crops will be studied from the standpoint of their importance, variety, culture and management.

340-D24A. WEEDS AND WEED CONTROL. (2 Credits; 2 lectures and 1 2-hr. lab.) Weeds will be studied from the standpoint of their relative importance as crop contaminants, their control by chemical and cultural means. Each student is required to make a collection of 20 farm weeds, suitably mounted. This collection will be used in the laboratory.
Professor Watson

340-D25B. SEED PRODUCTION, PROCESSING AND ANALYSIS. (2 Credits; 1 lecture, 2 2-hr. labs.) A study of production, processing, storage and marketing of seed. Attention is given to seed characteristics and their utilization in seed separation and analysis. Seed certification systems, seed grading and seed laws are examined. Considerable emphasis is placed on laboratory assignments dealing with seed processing and quality evaluation.
Professor Cuddy

340-D27B. CROP MANAGEMENT. (2 Credits; 2 lectures and 1 2-hr. lab.) Factors determining the crops to grow, cropping schemes for typical situations in Eastern Canada.

ANIMAL SCIENCE

342-D11B. PRINCIPLES OF LIVESTOCK IMPROVEMENT. (2 Credits; 3 lectures and 1 2-hr. lab.) The fundamental principles underlying the improvement of animals through breeding and the application of these principles to the improvement of livestock and poultry.
Professors Moxley and Buckland

342-D12A. ANIMAL ANATOMY AND PHYSIOLOGY. (2 Credits; 2 lectures and 1 3-hr. lab.) A study of the structure and function of the various organ systems of farm animals with special reference to those features associated with animal production.
Professor R.D. Baker

342-D13B. APPLIED ANIMAL NUTRITION. (2 Credits; 3 lectures and 1 2-hr. lab.) Nutrients in feeds and their function in the body. A study of common feeds and their use in animal rations. Ration formulation and feeding programs.
Professor Donefer

342-D28A. DAIRY CATTLE PRODUCTION. (3 Credits; 3 lectures and 1 2-hr. lab.) The application of biological principles of genetics, physiology, nutrition and pathology as well as principles of economics and engineering and the integration of these principles, through management, for the maximum production efficiency of milk and meat by dairy cattle. Trips to dairy farms and related enterprises will comprise part of the laboratory work.
Professor Harper

342-D29A. BEEF CATTLE AND SHEEP PRODUCTION. (3 Credits; 3 lectures and 1 2-hr. lab.) The application of biological principles of genetics, physiology, nutrition and pathology as well as principles of economics and engineering and the integration of these principles, through management, for the maximum production efficiency of beef cattle and sheep. Trips to beef and sheep farms and related enterprises will comprise part of the laboratory work.
Professor Donefer

342-D30B. SWINE PRODUCTION. (3 Credits; 3 lectures and 1 2-hr. lab.) The application of biological principles of genetics, physiology, nutrition and pathology as well as principles of economics and engineering and the integration of these principles, through management, for the maximum production efficiency of swine. Trips to swine farms and related enterprises will comprise part of the laboratory work.
Professor Hartsock

342-D31B. POULTRY PRODUCTION. (3 Credits; 3 lectures and 1 2-hr. lab.) The application of biological principles of genetics, physiology, nutrition and pathology as well as principles of economics and engineering and the integration of these principles, through management, for the maximum production efficiency of poultry meat and eggs. Trips to poultry farms and related enterprises will comprise part of the laboratory work.
Professor Buckland

BIOLOGY

344-D11A. AGRICULTURAL BOTANY. (2 Credits; 2 lectures and 1 2-hr. lab.) The course consists of a study of the fundamentals of growth and reproduction processes in plants. The botany of economic plants will be studied as much as possible and consideration given to weeds and weed seeds and their control.
Professor Pelletier

344-D13A. ZOOLOGY. (2 Credits; 2 lectures and 1 2-hr. lab.) A review of general zoology and its taxonomic basis, followed by elementary treatment of insects, including structure, classification, principles of ecology, principles of pest control, and use of literature on insects.
Professor Vickery

344-D21B. PEST CONTROL. (2 Credits; 2 lectures and 1 2-hr. lab.) Amplification of the principles of pest control and a summary of pest control chemicals. The student prepares notes on recognition, habits and control of eight plant diseases and eight insect pests of crops or animals of special interest to him.
Professors Viswanathan and Vickery

CHEMISTRY

332-D11A. ELEMENTARY CHEMISTRY. (2 Credits; 2 lectures and 1 2-hr. lab.) A chemistry course with special application to soils, fertilizers, feeding stuffs, and insecticides and fungicides.
Professor Henneberry

ECONOMICS

334-D17B. ECONOMICS OF CANADIAN AGRICULTURE. (2 Credits; 3 lectures.) The economics of the Canadian farm industry. Structure and organization. Commodity sectors. Marketing institutions and practices. Farm credit.
Professor MacEachern

334-D28D. FARM MANAGEMENT. (4 Credits; 2 lectures and 1 2-hr. lab.) The keeping of farm accounts and production records and their analysis as a means of improving the efficiency of production. Farm credit and partial budgeting as applied to farming. A study of the economic guides to farm management decisions. Farm income tax.

ENGLISH

348-D15D. ENGLISH. (2 Credits; 2 lectures.) Principles and practice of oral and written English.

ENTOMOLOGY

350-D22B. BEES AND BEEKEEPING. (2 Credits; 2 lectures, 1 conference.) Social insects, development of social behaviour and coevolution of flowering plants and social insects. Life and behaviour of honeybees. Insect pollination of plants. Economics of pollination and honey production. Practical beekeeping including all modern beekeeping practices.
Professor Vickery

EXTENSION METHODS

352-D21A. EXTENSION METHODS. (2 Credits; 1 lecture and 1 2-hr. lab.) A course to develop rural leadership and the ability to communicate ideas. Includes a study of the changing rural community and its redevelopment; the function of rural organizations; extension methods and communication skills.
Mr. Van Lierop

HORTICULTURE

358-D15B. GENERAL HORTICULTURE. (2 Credits; 3 lectures and 1 2-hr. lab.) A general course dealing with the principles of farm horticulture including the farm garden, the improvement of the home surroundings, potato production, the farm orchard and small fruit plantations, and home storage.
Professor Taper and Staff

358-D21B. THE COMMERCIAL PACKAGING, HANDLING, AND STORAGE OF HORTICULTURAL PRODUCTS. (2 Credits; 2 lectures and 1 lab.) Storage and storage practices. Canning, quick freezing and other means of food preservation will be considered.
Professor David

358-D22A. VEGETABLE CASH CROPS. (2 Credits; 2 lectures and 1 2-hr. lab.) A study of commercial vegetable production with reference to canning crops such as peas, beans, sweet corn and tomatoes; and storage crops such as potatoes, carrots, onions and cabbage.
Professor Bible

358-D23A. FRUIT CASH CROPS. (2 Credits; 2 lectures and 1 2-hr. lab.) The production of fruit cash crops for market and processing.
Professor Taper

358-D24B. COMMERCIAL ORNAMENTAL HORTICULTURE. (2 Credits; 2 lectures and 1 2-hr. lab.) A consideration of commercial nurseries and nursery practices, turf farming and the operation of garden centres.
Mr. Wigdor

MATHEMATICS

360-D15A. ALGEBRA, GEOMETRY AND TRIGONOMETRY. (2 Credits; 3 lectures.) An introductory course including a study of exponents, logarithms, the slide rule, characteristics of lines and planes, equations of line and circle, charts and graphs, trigonometrical functions, number bases, interest and annuities.
Professor Douglas

MICROBIOLOGY

362-D11B. AGRICULTURAL MICROBIOLOGY. (1 Credit; 1 2-hr. lab.) A study of bacteria in relation to milk, water, sewage, soil fertility, fermentation, food preservation and food poisoning.
Professor Robertson

PHYSICS

338-D16B. PHYSICS. (1 Credit; 2 lectures.) A course dealing with the fundamental principles of physics particularly in regard to energy.
Professor Douglas

338-D21A. AGRICULTURAL WEATHER AND CLIMATE. (2 Credits; 1 lecture, 1 2-hr. lab.) An introduction to weather and climate, with emphasis on such observations as can be made easily and inexpensively on a farm, and on the interpretation of these in terms of the weather map and forecast.
Professor Douglas

PROJECT

330-D26D. PROJECT. (2 Credits; equivalent of 2 labs.) A project is required of each Second year student. This will consist of a detailed analysis of the operation of a Canadian farm, and projected plans for the enterprise selected by the student to provide for full farm operations covering a period of five or more years. To be completed not later than March 31. Supervising Committee: The Diploma Course Committee.
Professor Lawson (Chairman)

SOIL SCIENCE

372-D11A. SOILS. (2 Credits; 2 lectures and 1 2-hr. lab.) Soil properties and characteristics; classification and mapping of soils; recognizing differences among soils on a farm; use of fertilizers, lime and manure; soil testing; tillage and soil management.
Professor Millette

WOODLAND RESOURCES

374-D21A. FARM FORESTRY. (2 Credits; 1 lecture and 2 2-hr. labs.) Principal trees of Eastern Canada and their silvicultural characteristics; woodlot protection; forest communities. Volume estimates of trees and woodlot products; woodlot timber cruising; calculation of annual cut; cutting methods; forest stand improvement; logging practices; reforestation and Christmas tree crops; sugar bush management; marketing of woodlot products.
Professor A.R.C. Jones

7.4 ACADEMIC STANDING — DIPLOMA IN AGRICULTURE

CREDIT SYSTEM

All courses carry a credit value. Courses are graded by letter. Ratings of 4, 3, 2, 1, and 0 are attached to the letter grades A, B, C, D, and F respectively. The letter grade F indicates a failure.

YEAR 1

A student, in order to proceed to the second term of Year 1, must achieve pass standing in at least half of the credits for which he was registered in the first term. Supplemental examination privileges will be granted up to a maximum of 12 credits at the end of Year 1. Students who have failed more than 12 credits will be required to withdraw. Students with more than 6 credits outstanding will not be allowed to register for Year 2.

YEAR 2

To be eligible for a Diploma, a student must have passed all the required courses and the electives approved by the Director of the Diploma Course. He must have accumulated a minimum of 62 credits. He must achieve a cumulative grade point average of at least 2.0 for all courses taken from the syllabus for Year 2.

The grade points for each course are calculated by multiplying the credit value of the course by the student's earned grade rating. The grade point average (GPA) is computed by dividing the sum of the grade points earned by the total course credit attempted. A failed course will remain in the calculation of the GPA even after the course is repeated and passed, or if a supplemental examination is taken.

SUPPLEMENTAL EXAMINATIONS

A student who has failed a course may either re-register for and repeat the course, or may apply to write one supplemental examination and will receive the grade earned. In the case of an elective course, the student may substitute another elective.

Supplemental privileges or re-registration are available for students who wish to up-grade their standing in a course in which a grade of D has been obtained. A student may re-register only once in any course. Supplemental examinations may be written at the August supplemental period or at the next regular final examination (i.e. December for first semester courses and April for second semester courses). By arrangement with the instructor, an examination may be made available at the end of a term in which there is no regular end of term examination in that course.

Candidates for a supplemental examination must make application for the examination at least three weeks prior to the examination date on forms available in the Registrar's office. The fee is $10 per paper.

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McGILL UNIV - FACULTY
OF ARTS / SCIENCE
McLENNAN REF. V. F.

Faculty of

ARTS

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1976/77

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1976/77

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McGill University, P.O. Box 6070, Station A
Montreal, Quebec, Canada H3C 3G1

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CALENDAR FOR SESSION 1976-77

1976

May 10, Monday to June 18, Friday	Summer Session, Part. I.
May 24, Monday	Victoria Day — Administrative Offices closed.
June 8, Tuesday and June 9, Wednesday	Convocations.
June 24, Tuesday	St. Jean Baptiste Day — Administrative Offices closed.
June 26, Saturday to August 9, Saturday	French Summer School.
July 1, Thursday	Canada Day — Administrative Offices closed.
July 5, Monday to August 13, Friday	Summer Session, Part II
August 2, Monday	Deadline for applications for Special and Visiting students.
August 10, Tuesday to August 19, Thursday	Supplemental examination period.
August 16, Monday to September 3, Friday	Freshman Orientation and pre-registration counselling.
September 6, Monday	Labour Day — Administrative Offices closed.
September 8, Wednesday September 9, Thursday	Registration of all students in Science, Visiting and Special students in Science.
September 10, Friday Spetember 11, Saturday	Registration of all students in Arts, Bachelor of Social Work, Visiting and Special students in Arts.
September 13, Monday	Lectures begin in all years of Arts and Science.
September 27, Monday to October 1, Friday	Change of course period.
September 28, Tuesday	Late registration.
October 11, Monday	Thanksgiving — Lectures cancelled — Administrative Offices closed.
October 15, Friday	Deadline for withdrawing ("W") from "A" (fall term) courses.
November 9, Tuesday	Fall Convocation.
November 26, Friday	Deadline for withdrawing ("W") from "D" (year) courses.
December 10, Friday	Last day of lectures in Arts and Science.
December 13, Monday to December 23, Thursday	Study Period — Faculty of Arts. Class tests in "D" Courses — Faculty of Science.
December 25, Saturday	Christmas — Closing of Administrative Offices to be announced.

1977

January 1, Saturday	New Year's Day — Closing of Administrative Offices to be announced.
January 4, Tuesday to January 14, Friday	Examinations in fall term courses in Arts and in Science.
January 14, Friday	January Registration (for students entering in January ONLY).
January 17, Monday	Winter term lectures begin in Arts and in Science.
January 24, Monday to January 28, Friday	Change of course period for "B" (Winter term) courses ONLY.
February 11, Friday and February 12, Saturday	Mid-term weekend holiday (Winter Carnival) — Lectures cancelled.
February 18, Friday	Deadline for withdrawing ("W") from "B" (winter term) courses.
April 8, Friday to	Easter — Lectures cancelled —
April 11, Monday (incl.)	Administrative Offices closed.
April 15, Friday	Last day of lectures in Arts and in Science.
April 18, Monday to May 6, Friday	Examinations in Winter term and full courses in Arts and in Science.
May 23, Monday	Victoria Day — Administrative Offices closed.
June 7, Tuesday and June 8, Wednesday	Convocations.

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GENERAL INFORMATION
Faculty of Arts
Faculty of Science

APPLICATIONS AND ADMISSIONS

The Faculty of Arts and the Faculty of Science offer programs leading to the degrees of B.A., B.Sc. and B.S.W.

The academic year at McGill runs from mid-September until early May, with approximately two weeks vacation at Christmas. The normal period of admission is in September; however, it is possible to be considered for admission to certain programs in January, and interested students should contact the Admissions Office in September 1976.

The deadlines for submission of applications are March 1 for admission in September and November 1 for admission in January. All applications must be accompanied by a non-refundable fee of $15.00 payable by certified cheque or money order in Canadian funds made out to McGill University.

Admission is selective, and students are reminded that fulfilment of the minimum requirements by no means guarantees acceptance.

Although our Admissions Officers are always pleased to meet prospective students, a personal interview is not required for admission.

Applicants whose mother tongue is not English, and who have not completed a CEGEP program in the Province of Quebec, must submit acceptable evidence of facility in English before an application for admission can be considered. The following evidence is acceptable: the Test of English as a Foreign Language (TOEFL); the University of Michigan English Language test; the Certificate of Proficiency in English issued by the Universities of Cambridge and Michigan.

TOEFL is preferred by the University; it is administered by the College Entrance Examination Board and is easily available throughout the world. Students who cannot obtain a TOEFL bulletin and registration form locally should write well in advance for them to: Test of English as a Foreign Language, Box 899, Princeton, New Jersey 08540, U.S.A.

General Information for Non-Canadian Students

A pamphlet describing immigration regulations in detail and containing notes and guidance to students from other countries is available from Canadian immigration offices, Canadian Embassies and British Consular offices, or from the Immigration Branch, Department of Citizenship and Immigration, Ottawa, Canada. Local immigration officers will be ready to give advice and help.

A useful handbook entitled *University Study in Canada* can be obtained from Canadian Embassies, Consulates, and the office of High Commissioners and Trade Commissioners. A leaflet entitled *Notes for Foreign Students Who Wish to Attend a Canadian University* may be obtained from The Association of Universities and Colleges of Canada, 151 Slater St., Ottawa, Ontario K1P 5N1

Further information may also be found in the McGill University *General Announcement*, available from the Registrar's Office.

Professional Studies

Students intending to proceed into Dentistry, Education, Law, Medicine or Religious Studies should consult the Faculties concerned about their prerequisites for admission. Students proceeding into graduate professional studies should note that admission is not automatic and that application forms must be submitted in advance of the prescribed dates. Requirements needed for admission to the Graduate School of Library Science or the School of Social Work may be obtained from these schools.

ENTRANCE QUALIFICATIONS

Quebec Students

Holders of the Diploma of Collegial Studies are considered for admission to the first year of an appropriate three year program (90 credits).

Colegial students should refer to the "Structures d'Accueil aux Etudes Universitaires de Premier Cycle" to ensure that they are registered in an appropriate pre-university program.

Entrance to The Faculty of Arts

Although it is preferable to begin a specialization at CEGEP, the Faculty feels that the basic courses in English and Humanities remain the minimum requirements for many programs.

It is recommended that students planning to enter Psychology should take Mathematics 337 or 103 and 307, Biology 301 and 401 or 921, and Psychology 102 during their CEGEP years.

Entrance to The Faculty of Science

The Quebec Diploma of Collegial Studies (D.C.S.) in Pure and Applied Science (or its equivalent) is the normal pattern of preparation for programs in both physical and biological sciences.

Students with a D.C.S. in the Health Science stream are accepted to programs in the biological sciences. Those with a Health Science D.C.S. wishing a program in the physical sciences should also take Mathematics 201-105*.

Physical Sciences: Students who intend to continue their studies in the physical sciences are strongly urged to take Mathematics 201-303* (Calculus III) as part of their CEGEP program.

Biological Sciences: Those proceeding in the biological sciences are strongly urged to take Chemistry 202-202* (Organic Chemistry I), and to select Biology 101-301 and 101-401 as part of their CEGEP program.

NOTE: For students interested in Psychology, Psychology 350-101*, -201* (Introduction to Psychology I and II) and Mathematics 201-307* or Mathematics 201-317* (Statistics) are recommended.

Although the pattern of study described above is strongly recommended, students who have obtained a D.C.S. with a concentration other than Pure and Applied Science or Health Science may be considered for admission.

**CEGEP course numbers — standard throughout the Province of Quebec.*

Provinces of Canada Other Than Québec

Entrance to The Faculty of Arts

Ontario Grade 13 students may be admitted to a 90-credit program if they have completed five academic subjects. (6 credits are granted for each subject with the exception of mathematics, each course of which receives 3 credits.) English should be included in the students' program; the four elective courses should be appropriate to the program which the student wishes to enter at McGill. Students having only four subjects will be required to make up an additional six credits at McGill.

Students from provinces of Canada other than Quebec, Ontario † and Newfoundland who have completed Grade 12 in appropriate academic subjects may be considered for admission to a program requiring the completion of 120 credits (normally four years of study).

Entrance to The Faculty of Science

All programs in the Faculty of Science require that the student complete the equivalent of introductory college level courses in biology, calculus, chemistry, and physics. Students who have completed these courses with satisfactory performance prior to admission are given credit and exemption.

Ontario Grade 13 courses in biology, chemistry, and physics are accepted for exemption and each is allowed 6 credits. Grade 13 courses in mathematics are allowed 3 credits each; students who have included calculus in their program are generally required to complete calculus II at McGill. And a maximum of 30 credits for all Grade 13 work. Students planning application to the Faculty of Science should follow a pre-science academic program including mathematics and chemistry prior to Grade 13. A student who has completed Grade 13 is considered for admission to a program requiring the completion of the difference between 120 credits and the number of credits he has been granted. For students short more than one basic science, this additional deficiency will be added to the calculated minimum credit requirement. Thus, a student who has completed biology, chemistry, physics, two (or preferably three) courses in mathematics and one non-science academic course, all at the Grade 13 level, enters a program requiring the completion of 90 credits.

Ontario † and Newfoundland who have completed Grade 12 with appropriate subjects may be considered for admission to a program requiring the completion of 120 credits (normally four years of study). Students should have completed a course in functions or trigonometry and a course in chemistry at the Grade 11 or 12 level (preferably Grade 12 level). A course in physics is strongly recommended.

NOTE: Applicants to the Faculty of Science from outside Québec who believe they have taken the equivalent of one or more introductory college level science courses but who do not have acceptable certification of their performance in these courses, should inquire at the Admissions Office as to their eligibility to take Placement Examinations at McGill for credit. These examinations may only be written up to the end of the first course change period after the student enters the Faculty. It is recommended the student arranges to take them before Registration if possible.

†Exceptions are sometimes made in the case of Grade 12 students with an average of over 80% in appropriate subjects. Such students may apply to a program requiring the completion of 120 credits.

Non-Canadian Applicants

General Information

Students from the United States must write College Entrance Examination Board tests; the Scholastic Aptitude Test and three other achievement tests appropriate to the program which they wish to enter at McGill. Applicants to a science program should select a minimum of two tests from biology, chemistry, mathematics and physics. Students from the Eastern United States may obtain information about the tests by writing to:

The College Entrance Examination Board
Box 592
Princeton, New Jersey 08540

Students from the West should write:
The College Entrance Examination Board
Box 1025
Berkeley, California 94701

Students from Overseas are advised to write CEEB Aptitude and Achievement tests to support their application.

Entrance to The Faculty of Arts

Students from the United Kingdom and Commonwealth countries may be admitted into a program requiring the completion of 90 credits (three years) with five General Certificate of Education papers in different subjects with three at the Advanced Level. An average grade of C or better is required. One of the five (or four) G.C.E. papers must be English Language.

Students with very good grades in five appropriate Ordinary Level papers PLUS one full year of formal schooling beyond Ordinary Level may be considered for entrance to an undergraduate program requiring the completion of 120 credits (usually four years).

High School graduates from the United States may be admitted to an undergraduate program requiring the completion of 120 credits. All applicants should have followed academic programs designed for university entrance. Students who have passed Advanced Placement examinations in appropriate subjects with a grade of "3" or better will be granted some advanced standing.

Entrance to The Faculty of Science

The three-year programs in the Faculty of Science have been designed on the assumption that the student has completed, or will complete at McGill, the equivalent of introductory college-level courses in biology, chemistry, physics, and mathematics.

Students who have completed Grade 12 in the United States are considered for admission to a program requiring the completion of the difference between 120 credits and the number of prerequisite credits they have earned. An Advanced Placement science course is considered the equivalent of 6 prerequisite credits, a grade of "3" or better is required for Advanced Placement credit to be granted. All applicants should have a strong background in mathematics (including a course in trigonometry or functions), chemistry, and physics. Biology is also desirable in the case of a student applying to one of the biological or health science programs.

Students from the United Kingdom and Commonwealth countries are normally required to have completed examinations in five different G.C.E. subjects including English, chemistry, mathematics, and physics, at least two of which must be at the Advanced Level. An average grade of "C" or better, with no more than one subject having a grade of "D", is also required. Each G.C.E. Advanced Level paper in a basic science subject (biology, chemistry, mathematics, physics) with a grade of "C" or better is granted the equivalent of 10 prerequisite credits; a maximum of 30 credits can be granted for Advanced Level results (a maximum of 10 credits is granted for papers in mathematics). Such students are considered for admission to a program requiring the completion of the difference between 120 credits and the number of prerequisite credits they have earned. For students short more than one basic science, this additional deficiency will be added to the calculated minimum credit requirement.

Students with very good grades in five appropriate Ordinary Level papers PLUS one full year of formal schooling beyond Ordinary Level will be considered for entrance to an undergraduate program requiring the completion of 120 credits. The five Ordinary Levels should include English, a second language, mathematics, and one of biology, chemistry or physics.

NOTE: Applicants to the Faculty of Science from outside Québec who believe they have taken the equivalent of one or more introductory college-level science courses, but who do not have acceptable certification of their performance in these courses, should inquire at the Admissions Office as to their eligibility to take Placement Examinations at McGill for credit. These examinations may only be written up to the end of the first course change period after the student enters the Faculty. It is recommended the student arranges to take them before Registration if possible.

Students From Other Countries

Students from other countries are advised to consult the *General Announcement* or the Admissions Office for specific information on the status of their national education certificates.

TRANSFER STUDENTS FROM OTHER UNIVERSITIES

McGill University accepts applications from students wishing to transfer from other universities. At least sixty credits towards graduation must be earned at McGill for students proceeding to the B.Sc. degree; at least forty-five McGill credits are normally required for the B.A. degree.

Such applications are considered when the student's cumulative grade point average (CGPA) is 3.0 or higher, and when his/her course background suits his/her intended program at McGill.

MATURE STUDENT ADMISSION POLICY

Residents of Canada who will be 23 years of age or older by September 1 (for admission to the Fall Session) or January 1 (for admission to the Winter Session) and who lack the academic background normally required for admission may apply for entrance as mature students.

Individuals interested in being considered for entrance under this policy should contact the Admissions Office for further information.

HOLDER OF A BACHELOR'S DEGREE

Students wishing to obtain a B.A. degree who already have a Bachelor's degree will, if admitted, be required to complete a minimum of 60 credits for the second degree. For students wishing a B.Sc.

degree, the minimum is 60 credits plus completion of any basic science courses (Biology, Chemistry, Mathematics, Physics) not previously taken.

SPECIAL AND VISITING STUDENTS

A student seeking admission as a Special or Visiting student in the Faculty of Arts or of Science should refer to page 8.

READMISSION

A student wishing to return to the Faculty of Arts or Faculty of Science after an absence of a portion of an academic year or more must follow the procedures outlined in the section on Faculty Regulations, page 16.

INTER-FACULTY TRANSFER

In certain cases students will be permitted to transfer from another Faculty to Arts or to Science. Information and inter-faculty transfer forms are available at the office of the Associate Dean.

FINANCIAL INFORMATION

The University reserves the right to make changes without notice in the published scale of fees.

Fees for the semester in which a student withdraws from the University are refundable under conditions described in the General Announcement.

Any inquiries regarding fees should be made at the Registrar's Office, F. Cyril James Administration Building.

FEES

Tuition fees of $19.00 per credit are charged. For example, a student who is taking an academic load of 30 credits would pay $570.00 in tuition fees ($19.00 x 30). Tuition fees vary according to the number of credits taken and are assessed on a term basis. Student Services and Students' Societies fees for all students taking 24 or more credits are $70.00 and $28.00*.

*B.S.W. students pay $30.00 for Students' Societies.

Part-Time, Special and Visiting Students

All Part-Time, Special and Visiting Students are assessed $19.00 per credit. In addition the following fees are assessed:

	Student Services	*Student Societies*
9-11 credits per term	$35.00	$14.00
6-8 credits per term*	$20.00	$ 5.00
5 credits or less*	$10.00	$ 5.00

**Excludes Athletics. At the discretion of the Director of Athletics, a student may participate in the Athletics program upon payment of an additional $30.00.*

Special Fees

Application for Admission	$15.00
Late Registration	25.00
Late Payment fee (after specified date):	
1st 30 days	10.00
After 30 days	25.00
Graduation (including academic dress for those *in presentia)*	10.00
Duplicate Student Identity Card	5.00
Duplicate diploma	10.00
Certified transcript of student's record:	
First two copies each	1.00
Additional copies made at the same time, each	.25
Re-reading examination paper	10.00
Supplemental examinations, each paper	10.00
Late change of course	5.00
Residence fees (see General Announcement)	

REGULATIONS FOR PAYMENT OF FEES

New Students

Fees are payable in two instalments. Students entering the University for the first time are required to pay their first instalment either by mail or in person at the Accounting Office within 10 days of registration. For students registering in September the second instalment is due before January 15th, 1977.

Returning Students

Returning students must pay one half of the total required fee by mail or in person to the Accounting Office before August 23rd, 1976, otherwise they will not be permitted to register. Instructions for paying fees in advance will be mailed to all returning students, either with their Sessional Reports of Standing or a short time later. Students who have been notified by the University of the award of a scholarship, bursary or student loan, and who require this award for payment of the first instalment of fees, must obtain permission to delay payment of fees from the Student Aid Office.

The second instalment is due by January 15th, 1977. A late payment fee as stated above is charged for payment after this date.

Late Registration

Students registering late must pay their fees at the time of registration.

As soon as possible after the prescribed dates for the payment of fees the Chief Accountant will send to the Registrar's Office a list of the registered students who have not paid their fees. Reports of Standing, transcripts of records and diplomas will be withheld until such time as the fees are paid or a satisfactory arrangement is made with the Chief Accountant.

SCHOLARSHIPS AND FINANCIAL AID

Full information concerning scholarships and financial aid is available in the *Undergraduate Scholarships and Awards Announcement* which may be obtained from the Registrar's office.

STUDENT SERVICES AND RESIDENTIAL FACILITIES

A variety of student services and residence accommodation, co-educational and for women, are available. For details see the *General Announcement* available from the Registrar's office.

REGISTRATION

GENERAL INFORMATION

Registration takes place early in September for students entering in September and in January for students entering in January; lectures begin shortly thereafter. Complete information for the use of newly accepted candidates is sent with the letter of admission, and is specified on the Report of Standing for returning students eligible to re-register.

Incoming students in programs requiring 96 or fewer credits who have made their choice as to area of study may proceed directly to the appropriate Academic Adviser for completion of a Study Plan Form before registration (see page 10, Faculty Regulations.) Students who have not decided on their area of study or who are seeking additional advice should first consult an adviser in the Student Affairs Office, Dawson Hall, for guidance. Students admitted to a 97 to 120 credit program will, in most cases, be assigned to an adviser in the Office of the Associate Dean for completion of a Study Plan Form before registration.

Students must come to the specified place for registration at the appropriate date and time, and must bring with them the following:

Returning Students:
— Report of Standing (if the student is returning in satisfactory or probationary standing);
— if applicable, a permission to register form and/or deferred or supplemental results;
— letter of readmission;
— student I.D. card;
— study plan form.

New Students:
— letter of admission
— study plan form.

TIMETABLE

An official lecture timetable is available before and at registration. A preliminary version of the timetable (omitting lecture locations) is available at the time of publication of the *Announcement.*

It is the responsibility of each student to make sure at the time of registration that there is no conflict in the timetable of courses which he proposes to follow.

Students arriving late for lectures may be denied entrance by the instructor.

LATE REGISTRATION

There will be a period of registration for those unable to register at the stipulated time. (See Calendar of Dates, page 3). There will be a late registration fee of $25.00.

COURSE NUMBERING SYSTEM

Courses are given a 7 place designation. The first three digits specify the department by a numerical code (see table below), the next three digits form the course number proper, and the final letter indicates the term or terms during which the course is offered; most courses follow this pattern:

A — Fall term
B — Winter term
D — Full session
L — Summer session, Part I
C — Summer session, Part II

To illustrate: 189-223A designates Mathematics (189) course 223 given in the Fall term; 180-222A,B denotes Chemistry (180) course 222 given in either the Fall or Winter terms; 204-201D designates Psychology (204) course 201 given over the full session.

DEPARTMENTAL CODES

101 — History
104 — Linguistics
107 — Philosophy
110 — English (formerly 120)
111 — African Studies
114 — Classics
117 — East Asian Studies
123 — Art History
125 — French (formerly 126)
127 — French Language Centre
129 — German
132 — Italian
135 — Jewish Studies Program
141 — Russian and Slavic Studies
144 — Hispanic Studies
151 — Anthropology
154 — Economics
157 — Centre d'Etudes Canadiennes-Françaises
160 — Political Science
166 — Sociology
177 — Biology
180 — Chemistry
183 — Geography
186 — Geological Sciences
189 — Mathematics
195 — Meteorology
198 — Physics
204 — Psychology
210, 211, 214, 243 — Music
260 — Religious Studies

278, 279 — Management
308 — Computer Science
391 — Parasitology
395 — Marine Sciences
397 — Islamic Studies
407 — Social Work
504 — Anatomy
507 — Biochemistry
516 — Experimental Medicine
528 — Microbiology and Immunology
546 — Pathology
549 — Pharmacology
552 — Physiology

FACULTY REGULATIONS

GENERAL INFORMATION

Arts

The Faculty of Arts offers Major and Honours programs in a wide range of fields as well as a series of interdisciplinary majors. In cooperation with the Faculty of Science, B.A. Faculty Programs are also offered in three areas. (See page 22).

In a Major Program, 54 credits must normally be approved as part of that program, and the student may select his remaining courses from the offerings of the Faculties of Arts and of Science.

Honours programs involve a high degree of specialization, and require the student to satisfy specific departmental Honours requirements while maintaining a good academic standing. Joint Honours programs are available in many related disciplines. Consult departmental listings.

Students may take for elective credit any course listed and described in the Announcement of the Faculties of Arts and of Science for which they have the necessary prerequisites. In certain cases, a student is permitted to chose an elective course from another Faculty, e.g. Education, Management, etc. Approval of the Academic Adviser and, in some cases, the Associate Dean is necessary.

Science

There are three types of programs: Faculty Programs, Major Programs and Honours Programs.

A Faculty Program is an approved coherent selection of courses giving the student a useful concentration in a recognized area. Three-fifths of the student's course load in a Faculty Program is specified, the remaining courses being freely elected from those offered in the Faculties of Science and of Arts. A student in a Faculty Program may thus choose a pattern of study which can range from one yielding a broad education to one specializing in particular interests.

Major Programs are more specialized than Faculty Programs, and are usually centred around a specific discipline or department. Between three-fifths and four-fifths of the course load is specified in the program and the student is free to elect the remaining courses from the offerings of the Faculties of Science and of Arts.

Honours Programs require the student to maintain academic performance at a high standard in addition to involving a very high degree of specialization. They are designed for those students wishing an intensive preparation for graduate studies.

Students may take for elective credit any course listed and described in the Announcement of the Faculties of Arts and of Science for which they have the necessary prerequisites. In addition, 6 credits of elective courses from Faculties other than Science and Arts which are not described in this Announcement may be chosen in any one period from September through August, to a maximum of 18 credits in their degree program. Students must have the necessary prerequisites **and** permission of the instructor. It is the responsibility of the student, in cases of potential overlap of material between a course for which he has already received credit and a course he proposes to take, to determine from the Office of the Associate Dean whether or not additional credit can be obtained for the proposed course.

DEGREE REQUIREMENTS

The minimum credit requirement of each student for his degree is determined as specified on page 5 in the section on Admissions. In addition, each candidate for a degree must complete the requirements for the Honours, Major or Faculty program (see below) in which he is registered and must achieve a minimum CGPA of 2.0. The minimum residency requirement for a B.A. degree is 45 credits and for a B.Sc. degree is 60 credits.

Note: In the case of certain students in the Faculty of Science, specified basic science requirements (biology, chemistry, mathematics, physics) must be fulfilled as indicated on the letter of acceptance.

Departments may recommend to Faculty that a student be awarded Honours or First Class Honours under the following conditions: that the student complete all requirements imposed by the department, and that the CGPA at graduation be 2.8 to 3.49 for Honours and 3.5 or better for First Class Honours.

Students in a Major or Faculty program who complete at least 60 credits at McGill and graduate with a CGPA of 3.5 or better will be awarded their degrees with "Great Distinction"; those with a CGPA between 3.3 and 3.49 will receive their degrees with "Distinction."

PROGRAM REQUIREMENTS

To fulfill the requirements of a Faculty, Major or Honours Program, a student must pass all required courses (see definition on page 5) in his or her program with a grade of C or better.

A student who achieves a mark of "F", "J" or "D" in a course may repeat that course or, with permission, attempt a supplemental examination in the

course. In some cases, he or she must do so, to fulfill a departmental requirement or to satisfy a prerequisite requirement.

The mark achieved in the repeated course or attempted supplemental will count into the GPA and the CGPA, together with the original mark. However, if the student achieved a "D" in the original course, and thus already received credit for the course, he or she will not receive additional credit for passing the course again.

A student may choose to substitute another course for one in which he or she has received a grade of "F", "J" or "D" under the following guidelines: In the case of a required course in a program, specifically designated by course number, substitution will be allowed only in special cases, and the student should consult his or her Adviser. An optional course within a program may be replaced only by another option. (If a student chooses to substitute another option for a course in which he or she has received a grade of D, credit for the first course will still be given but as an elective.)

COURSE RESTRICTIONS

Students in the Faculties of Arts and of Science are permitted to take any course listed and described in this Announcement for which they have the necessary prerequisites. Prerequisites and other kinds of restricting information are stated clearly in each course description and/or in the general department entry.

Other restrictions include courses that require the permission of the instructor because of space limitations or because the course is normally open only to students in a particular program or to Honours students.

Students must be aware that courses that they have taken and passed under another number or in another Department are not open to them, as specified in this Announcement.

GRADING AND CREDIT SYSTEM

All courses carry a credit rating indicated beside the course title in the Announcement listing.

No credit towards a program at McGill will be given to a student repeating the same course already passed at CEGEP.

Courses are graded either by letter grades or in percent with the following correspondences: A (80—100%), B (65—79%), C (55—64%), D (45—54%), F (0—44%). (All reports of standing, verification forms, transcripts and other documents will show both letter grades and reported percentage grades.) Grades A, B, C are termed satisfactory passes, D a conditional pass and F a failure. Certain courses have been approved for Pass/Fail (P/F) grading.

Although the grade of D ia a passing grade, a grade of C or higher (Satisfactory Pass) must be achieved in all courses specified as required courses for an Honours, Major or Faculty Program. Moreover, no student may register for a course for which he has not passed all the prerequisite courses with a grade of C or better, except by written permission of the department concerned.

Numerical equivalents of 4, 3, 2, 1, 0 are attached to the grades of A, B, C, D, F respectively. The earned grade point for each course is calculated by multiplying the credit rating of the course by the numerical equivalent of the letter grade earned. Standing will be determined on the basis of a grade point average ((GPA) computed by dividing the sum of the grade points accumulated during the year by the total course credits attempted.

The cumulative grade point average (CGPA) will be the grade point average calculated using the student's entire record at McGill in a degree program. Grades of D or F continue to be used in the calculation of the CGPA even after the course is repeated or a supplemental examination is taken.

Example: A new student has taken the following courses and receives the indicated grades:

	Credits	*Mark*	*Grade*	*Grade Points*
Art History 123-315D	6		B	18
Chemistry 180-212A	4	62%	C	8
English 110-314A	3		A	12
Geography 183-315B	3	50%	D	3
History 101-328B	3		F	0
Philosophy 107-420D	6		A	24
Psychology 204-211D	6	78%	B	18
	31			83

$$\text{Sessional GPA} = \frac{83}{31} = 2.68$$

Supplemental Examination			
History 101-328B	3	C	6
Total	34	Total	89

$$\text{CGPA} = \frac{89}{34} = 2.62$$

TRANSFER CREDITS

In certain cases, credit may be granted by Faculty for courses taken at other universities. Approval by the Associate Dean is necessary and should generally be obtained in advance. It is the student's responsibility, on completion of course(s), to ensure that transcripts from the other University are sent to the Associate Dean of the appropriate faculty, Dawson Hall.

There is an agreement among the universities in the Province of Québec whereby a student, under special circumstances, may take some of his course load in any academic year with Faculty permission at another university in the Province of Quebec and have these courses recognized by McGill. Further information may be obtained from the office of the Associate Dean.

NOTE: Transfer credits are not calculated in the GPA or CGPA and the grades are not entered on the student's McGill transcript.

ACADEMIC STANDING

Satisfactory Standing

A student enters the University in satisfactory standing and remains in this standing unless his GPA for any year drops below 2.0.

Probationary Standing

A student whose GPA drops to between 1.5 and 1.99 (1.2 and 1.99 for his entering year) is placed on probationary standing.

A student in probationary standing must return to satisfactory standing at the end of the next academic year by obtaining a GPA of 2.5 or CGPA of 2.0, otherwise he will be placed in unsatisfactory standing.

NOTE: A student in satisfactory or probationary standing who has failed to obtain a satisfactory grade in a course required by his program is conditioned in that course. He will then be required either to pass the supplemental examination in the course (if available) or to repeat the course. If the course is taken as an option in his program, he or she may choose to replace it with another option.

Unsatisfactory Standing

A GPA of less than 1.5 (1.2 in the first year if the student enters U1) places a student in unsatisfactory standing.

Students in unsatisfactory standing may not reregister in the Faculty without special permission. They may be readmitted after appealing to the Committee on Student Standing and considered in probationary standing for the next academic session. A student in unsatisfactory standing for the second time must withdraw permanently.

Honours

To be registered in an Honours program after first year, a student must have attained a GPA and CGPA of at least 2.8 in the previous year, unless the student has special permission from his or her Department and the Associate Dean. Departments may impose additional Honours requirements. These, where applicable, will be found with the departmental Honours program descriptions.

STUDENT CATEGORIES AND COURSE LOADS

Degree Candidates

The normal course load per term in 15 credits. Students in satisfactory standing may take up to 17 credits per term. A load of up to 19 credits per term is permitted students whose GPA is above 3.0.

Students in probationary standing take a maximum of 12 credits per term, except that they may add to this load a repeated course in which a grade of "D" was originally obtained.

Students who wish to carry fewer than 12 credits per term are considered to be part-time and must consult the Office of the Associate Dean, Dawson Hall. Certain programs must be completed within a specified number of years; such information is available from the Departments concerned and from the Office of the Associate Dean.

Special Students

A special student takes regular credit courses, but is not working towards a degree. To qualify for this status a student must hold an undergraduate degree and have a specific approved plan of study. Applications must be made at the Office of the Associate Dean, Dawson Hall, before August 1. Special student status may be granted for a maximum of one year.

Visiting Students

A visiting student is one who is taking courses at McGill for credit towards his or her program at another university. Applications must be made at the Office of the Associate Dean, Dawson Hall, before August 1. Visiting student status may be granted for a maximum of one year.

STUDENT RECORDS

Personal Information

It is important that every student keep his official record up to date.

Any change in name (e.g. marital status), home address and telephone number, Montreal address and telephone number should be reported to the Office the Associate Dean, Dawson Hall, as soon as possible.

Verification of Program

Each student is responsible for his or her registration in the proper courses and programs and is expected to pick up his or her verification form at the Office of the Associate Dean, Dawson Hall in October and February (exact dates will be announced during the change of course periods.) It is the student's responsiblity to check the verification form for errors and return it, signed, to the Office of the Associate Dean, Dawson Hall.

Students who expect to graduate in January or June of the current academic year or November of the following academic year should check the expected date of graduation on the form. It is the responsibility of the student to ensure that he has met all Departmental and Faculty requirements to graduate.

TRANSCRIPT OF ACADEMIC RECORD

Certified transcript(s) of a student's academic record may be obtained by applying to the Registrar's Office, F. Cyril James Building. Transcripts are not available from the Office of the Associate Dean, Dawson Hall. A student may, however, photocopy his or her verification form before returning it during a verification period (see above), for use as an unofficial academic record.

All courses taken at McGill and all results (both letter grades and reported percentage grades) obtained appear on the transcipt.

The following is an explanation of the symbols used:

A, B, C — satisfactory pass
D — conditional pass
F — failure
P — pass
(See credit system page 11.)

K — incomplete; see incomplete courses, page 15.

KF — failed to meet the extended deadline for submission of work in a course; counts as a failure in the GPA and CGPA.

KK — not required to complete course.

K* — further extension granted.

J — absent; the student is registered for a course but does not write the examination or do other required work. The J will be calculated as a failure in the GPA and CGPA. See Final Examinations, page 14.

W — withdrew; a course dropped, with permission, after the change of course period; see Withdrawal from Course, page 14. Does not enter into the GPA calculation.

WF — withdrew failing; a course dropped, with special permission after Faculty deadline for Withdrawal from Course (see page 14.) The student's performance in the course at that stage being on the level of an F. Does not enter into GPA calculation.

L — deferred; see deferred examinations, page 15.

L* — permitted to defer examination for more than the normal period.

WL — Faculty permission to withdraw from a deferred examination.

Q — Course continued in next term.

&& — Grade not yet available (no averages calculated.)

-- — No grade — student withdrew from the University.

NOTE: Although students register in only one program, some students may also complete the courses required in a second program. Recognition of this situation on the final transcript of such a student is possible in the form of a notation that the student has also completed the second program. A student wishing to arrange for this recognition on his transcript should consult the Office of the Associate Dean before registering for his or her final year.

ADVISERS

It is essential that each student consult with an adviser in the Office of the Associate Dean, Dawson Hall and/or in a Department and complete a study plan form before registration, as explained below:

General Counselling

General program and course information is available at the Office of the Associate Dean. Students who are undecided as to their program or who may wish to change programs may consult a counsellor at Dawson Hall or may seek further information from a department in their general area of interest. The student will subsequently be referred to an Academic Adviser (see below) for approval of his or her program and completion of a study plan form before registration.

Academic Advisers

Each program has appointed Academic Advisers who will meet with students and approve their programs by signing the study plan form in Honours, Major and Faculty programs. (See the departmental listings for their names and/or locations.)

When meeting with an Academic Adviser, every student should bring:

— Report of Standing (if the student is returning in satisfactory or probationary standing);
— if applicable, a permission to register form and/or deferred or supplemental results;
— letter of admission or re-admission .

Each student should have consulted this Announcement and the lecture timetable before this meeting and should bring these documents with him or her.

New Students

A student admitted to a program requiring 96 or fewer credits must consult an Academic Adviser and must present his or her transcript and letter of admission to facilitate program planning.

A student admitted to a program requiring 97-120 credits will normally be considered in a Freshman Program until he or she completes his or her first year and must consult an adviser in the Office of the Associate Dean, Dawson Hall (telephone 392-5084)

to obtain advice and complete a study plan form before registration.

SPECIAL TERMS APPLIED TO COURSES

Required Course: A course which, if satisfactorily passed, will be counted as completing part of the credit total constituting his program.

Option: A course or sequence of courses that may be selected as part of an Honours, Major or Faculty program.

Elective: A course which a student selects to fulfill part of the credit requirements for his or her degree but which is not counted as part of the Honours, Major or Faculty program in which he or she is registered (See page 5, General Information for elective courses outside the Faculties of Arts and of Science).

Prerequisite: Course A is prerequisite to course B if a satisfactory pass in course A is required for admission to course B.

Corequisite: Course A is corequisite to course B if course A must be taken concurrently with (or prior to) course B.

CHANGE OF COURSE

Students who wish to change a course (change from one course to another, add a course, drop a course) for which they are registered must obtain change of course cards from the Office of the Associate Dean within the change of course period. Such changes must not introduce conflicts in the timetable nor destroy the required sequence of courses and must be approved by the instructor of any new course added and by the Honours, Major or Faculty program adviser.

*Change of Course Period**

A courses (fall term) — Monday, September 27 to Friday, October 1, 1976.
D courses (full year) — Monday, September 27 to Friday, October 1, 1976.
B courses (winter term) — Monday, January 24 to Friday, January 28, 1977.

**Students who wish to change a course after the change of course period may apply to the Office of the Associate Dean until October 8, 1976 for "A" and "D" courses, and February 4, 1977 for "B" courses and must pay a fee of $5 for each change. After these dates no change of course will be allowed.*

Change of Section

Many courses with large enrolments are given in several sections at different times. For any change of section within the same course, the Department concerned should be consulted. Such changes need not be reported to the Associate Dean's office, Dawson Hall.

WITHDRAWAL FROM COURSE

Withdrawal from a course after the change of course period will be allowed (the student must apply at the Office of the Associate Dean) up to the following dates:
A courses (fall term) — Friday, October 15, 1976.
D courses (full year) — Friday, November 26, 1976.
B courses (winter term) — Friday, February 18, 1977.

The transcript will show the course with the symbol of W, but the course will not be counted in the GPA.

After the deadline listed above, the Associate Dean may, under exceptional circumstances, grant permission for a student to withdraw from a course. (Permission will not be granted merely because a student is doing unsatisfactory work.) W or WF as appropriate will appear on the transcript, but will not be calculated in the GPA.

LANGUAGE POLICY

The language of instruction at McGill is English. Students may if they wish write term papers and answers to examinations in French (except in the case of certain language and literature courses), but competence in English is essential to success at the University. It is recommended that students who lack fluency in English take a course in English as a second language at McGill's Summer Session or elsewhere before embarking on a university program of studies.

There are no language requirements in either faculty. English-speaking Quebec students are encouraged to develop proficiency in French.

EXAMINATIONS

No student will be permitted to write an examination in any course unless he has fulfilled the requirements of the course to the satisfaction of the instructor and the Associate Dean. Once a student has presented himself or herself for an examination or test, he or she must submit all written work to the invigilator before leaving.

Students are reminded that cheating in an examination is considered a serious offence which could lead to expulsion from the University.

Class Tests

Members of the teaching staff may from time to time give interim class tests if they think them necessary.

Final Examinations

Final examinations are held during an examination period following the term in which the course is given. In some courses there is no final examination; standing in these courses is determined on the basis of term work and class tests.

Instructors are not permitted to grant any special treatment regarding examinations to any student. If

a student believes there is some circumstance which might be legitimately taken into account in evaluating his or her performance, he or she should apply to the Associate Dean.

A student who is not present for an examination must clarify his or her status in the course at the Office of the Associate Dean and may be allowed to write a supplemental examination. If his or her absence is for an accepted reason such as illness, family affliction, etc., he or she may be granted permission to write a deferred examination (see page 15), if he or she is not granted deferred status, he or she will receive a grade of "J" in the course which will count as a failure in his GPA and CGPA, but may be allowed to write a supplemental examination.

It is the responsibility of the student to confirm the date, time and place of his examination.

NOTE: Students enrolled in courses in Faculties other than Arts or Science must confirm examination dates with those faculties.

Supplemental Examinations

There is a supplemental examination period during the month of August. A student may receive permission to write supplemental examinations, if available, in courses in which he or she obtained a D or an F. He or she should avail himself or herself of this privilege at the time of the next supplemental examination period. The supplemental result will not erase the D or F originally obtained which is used in calculating the GPA. Both the original mark and the supplemental result will be calculated in the CGPA (i.e. the taking of a supplemental examination has the same effect on a student's CGPA as does repeating the course).

Written application to write a supplemental examination must be received at Dawson Hall before July 2. Special permission is required if a student wishes to write supplementals totaling more than 7 credits. A fee of $10.00 for each supplemental paper is payable at the time of application.

It may be possible for a student to arrange to write a supplemental examination at certain specified locations other than McGill University; students should apply at the Office of the Associate Dean. There is an additional fee.

In certain cases, a student may be permitted to write one supplemental examination during the April-May examination period in a first term course in which he or she has obtained a D or an F, if the course is also given in the second term. No attempt is made to avoid conflict between this supplemental and the student's required final examinations, and in the case of such a timetable conflict the student will be required to write the final examination and postpone the supplemental to the August period.

Depending on the course, the supplemental result may or may not include the same proportion of class work as did the original grade. The instructor will announce the arrangements to be used for his or her course early in the term.

Deferred Examinations

A student who, for reasons such as illness or family affliction, verified and accepted by the Associate Dean's Office, has been unable to write one or more examinations, may receive permission to write deferred examinations in their stead which will normally be written in the next supplemental examination period. The Associate Dean's Office must be informed within one week of the examination of the reasons for absences. If the request is approved, an "L" will appear on the Report of Standing in place of a grade in such courses, followed by the grade obtained in the deferred examination after it has been written.

Reassessments and Rereads

Papers are marked and grades calculated and handled with considerable care. However, if a student wishes his or her marks checked or examination paper re-read, he or she should apply in writing to the Office of the Associate Dean, Dawson Hall.

The first step is *reassessment* (re-calculation of grades) and is done free of charge. If there is no change in the grades as a result of the reassessment, the student may then apply for a *re-read* of the final examination paper, for which there is a $10 fee. The fee will be refunded if an error is found in the student's favour. If the result is a lower mark, the lower mark will stand and there will be no refund. Computer-marked exams can be reassessed but not re-read.

Application for reassessments must be made by March 30 for A courses, and by August 2 for B and D courses. Requests for reassessments or re-reads in more than one course will not be permitted.

Any request to have term work re-evaluated must be made directly to the professor concerned.

Credit by Examination

In certain exceptional cases a student may apply to write the final examination in order to obtain credit in a course for which he or she has not registered (this is possible only in those courses where there is no other assessment except the final examination).

Special Facilities

Students with visual or other disabilities should consult the Office of the Associate Dean about the possibility of special examination facilities.

INCOMPLETE COURSES

If, in the instructor's opinion, there is sufficient reason to permit a delay in the submission of required term work, an extension of deadline of up to four months after the end of the course may be granted the student. In this case, the instructor will submit a grade of "K" (incomplete). If a new grade is submitted within the deadline by the instructor, this will appear on the student's Faculty reports and verification forms following the K and will replace the K on the student's official transcript.

If the required work is not completed before the deadline the grade of KF will be recorded in the same way as the grade above. (KF denotes a failed course and has the same effect on the GPA as an F.)

In exceptional circumstances, and with the approval of the Associate Dean, the four month deadline may be extended further, in which case the grade of "K*" will appear.

A student who has not, without accepted excuse, participated or written the final examination in a course for which he or she has registered may be given a grade of J (absent). In the calculation of the GPA, this is treated as an F.

PLAGIARISM

In submitting work in their courses students should remember that plagiarism is considered to be an extremely serious offence. If a student has any doubt as to what might be considered "plagiarism" in preparing an essay or term paper, he or she should consult the instructor of the course to obtain appropriate guidelines.

WITHDRAWAL FROM THE UNIVERSITY

The responsibility for initiating withdrawals rests solely with the student. Neither notification of the course instructors nor discontinuance of class attendance will suffice. A student who wishes to withdraw officially from the University during the academic year must secure permission from the Office of the Associate Dean. The appropriate form will be supplied. A student considering withdrawal is strongly urged to consult his or her Academic Adviser before making a final decision.

The date on which a student's withdrawal is approved by the Office of the Associate Dean is the official date of withdrawal, even if he or she stopped attending lectures earlier. Fees are refundable under conditions outlined in the *General Announcement.*

READMISSION

A student who has withdrawn from his or her Faculty or who has not re-registered for a term or more must make application in writing to the Associate Dean (not to the Admissions Office) to be readmitted, stating the reasons for his or her absence from the University and giving a summary of his or her activities during that period.

Students who withdrew because of illness should provide some indication that they are ready to resume studies.

SUMMER SESSION — 1976

The 1976 Summer Session will consist of two parts: Summer Session Part I to be held in May and June, and Summer Session Part II, in July and August. Each Session has in turn been divided into two "terms" in order to distinguish between full courses (6 credits) which will run the length of the six week session and half courses (3 credits) which will be held over a period of three weeks. Please consult the Summer Session Announcement for term and examination dates.

Please note that courses taken during the Summer Session(s) by students registered in the degree program are considered in the same way as courses taken during the regular session, and that they enter into the calculations of the student's GPA, CGPA, credit total and standing.

Full information concerning course offerings, applications, and requirements may be obtained from:

Summer Session Office
McGill University
P.O. Box 6070, Station A,
Montreal, Quebec, Canada
H3C 3G1
(514) 392-6740

ENVIRONMENTAL STUDIES

The term "Environmental Studies" usually denotes all studies concerned with the relationship of man to his natural and man-made environment. Thus the term is used to categorize courses and groups of courses concerned with topics as narrow as the technology of pollution-control or as broad as land-use planning; it also encompasses such diverse subjects as mathematical modelling of socio-economic systems as these affect the quality of human life as well as religious values governing the attitude of man towards nature. Because "Environmental Studies" is, by definition, man-centred, it often excludes courses and degree programs that deal with components of the human environment but that do not consider the human impact on degradation or perception of these components, be they the earth's atmosphere, forests, or waters. It also excludes ecological studies of plants and animals in natural settings unaffected by man. Environmental or ecological studies that are not focused on man and his impact have often been referred to as "Environmental Sciences". In this Announcement description, however, the distinction between "Environmental Studies" and "Environmental Sciences" has been overlooked in order to give students as complete a perspective as possible on the University's offerings in the broad area of teaching and research known as the "environment".

McGill University does not have a degree program in Environmental Studies per se because the subject is too broad to be covered adequately by any one undergraduate curriculum. An Environmental Studies "minor" has also not proved feasible because it would have meant even greater dilution of the subject, particularly if only one "minor" were available for Arts, Science, and Engineering students. The University has, however, many conventional degree programs that are eminently "environmental" in scope and orientation, although they may deal with only one

segment of the total area of environmental concern. The University offers, in addition, a number of courses, given by different departments, that stress the comprehensive nature of environmental problems, and hence the need to synthesize humanistic, institutional and scientific knowledge in order to understand these problems. These courses, which have few prerequisites, are available as electives to students in any degree program, and serve to place the student's field of specialization in the overall context of the environmental dilemma. Thus by choosing one of the "environmental" degree programs and by judicious selection of electives, a McGill student should be able to meet the basic requirements of a sound "environmental" education to:

a) acquire the skills and intellectual discipline of an established field that deals with one environmental component or one aspect of man's relation to his environment; in order to be effective and employable after graduation, a student needs, in any case, to concentrate his efforts in one particular direction:
b) be able to see the relevance of one's own field of specialization to the overall environmental concern; at the same time, be able to understand complex cause-and-effect relationships that transcend traditional disciplines, and to think automatically of the consequences of altering the physical human environment;
c) be able to communicate with specialists in related disciplines;
d) be aware of the basic institutional mechanisms for dealing with environmental problems (government, law, etc);
e) be aware that environmental problems, as well as the solution to these problems, ultimately stem from personal and societal values and attitudes.

Existing degree programs with an environmental focus, or partial focus, are listed below, together with the general area of employment that these programs can lead to. In choosing one of these programs, students should bear in mind their talents and inclinations, their interest in a particular environmental component (e.g., cities, non-urban landscape, vegetation, inland waters, etc.) and their tentative employment goals.

Faculties of Arts and Science

BIOLOGY (Department of). Students interested primarily in an understanding of the principles of the science of ecology, that is of the relationships of plants and animals to their environment and to each other and of the behavior of biotic populations, should consider the *Ecology option* of the Biology section of this Announcement). Training in ecology is not concerned primarily with pollution, pollution control, or with the social-technological causes of environmental degradation; a sound training in biology-ecology precludes systematic treatment of all these subjects. Students who complete this program are qualified biologists who can pursue graduate work in Ecology or Biology, or enter employment with government agencies dealing with wildlife, fisheries, or vegetation. A few job opportunities are also available with consulting firms that prepare environmental impact statements or that plan the routing of transmission lines, pipelines, etc.

Other degree programs in Biology can conceivably lead to work in the environmental field. In particular, students interested in the pollution problems of the oceans should be aware that the *Marine Biology option* of the Biology Major Program provides the basic training required for possible later work in marine conservation or pollution control.

GEOGRAPHY (Department of). Geography is a discipline which bridges the gap between Science and Arts, and which has as its central theme the study of man in his physical and man-made environment. Geography also stresses a unified view of the landscape, problems of location including the influence of place and distance on various phenomena, and spatial variation in landscape characteristics, including environmental quality. Owing to these traditional emphases, many of Geography's offerings are thus "environmental" in nature; in particular, two of its programs have been developed with the environmentally-oriented student in mind. These programs are:

B.A./B.Sc. Hons. in Geography (General stream)
B.A. Major in Urban Systems

B.A./B.Sc. HONS. IN GEOGRAPHY (General stream). This program was originally developed in response to a demand from B.A. students for an integrated physical-human geography curriculum. As it is now available, the program consists of two sub-streams, one of which stresses integrated training in physical geography (the ordinary B.Sc. Hons. degree in physical geography requires selection of an area of specialization from within physical geography), and the other a synthesis of physical and human-geographical topics. The first sub-stream is open to B.Sc. students provided they fulfill the requirements of the Faculty of Science; both sub-streams are open to B.A. students. A degree in general geography can lead to graduate work in Geography, Regional Planning, or Resource Management, or to employment with government agencies and consulting firms dealing with regional planning, resource management, park planning, environmental-impact prediction, or similar work of synthesis.

B.A. MAJOR IN URBAN SYSTEMS. This Major program is designed to expose students to the various approaches to urban studies and urban problems taken not only by geographers but by other McGill Departments as well. The program consists of two sub-streams, one of which stresses environmental issues; both sub-streams

include geography, architecture, economics, anthropology, engineering, sociology and law courses. The degree leads to more advanced work in Urban Planning or Urban Geography or to a career in urban planning with either private or public planning organizations.

Other Geography programs that have a strong environmental component include the *B.A. Majors in Cultural Ecology* and in the *Human Geography of the Indians and Eskimos in Canada.* Information on all Geography programs can be obtained from the B.A. or B.Sc. Major advisers of this Department.

GEOLOGICAL SCIENCES (Department of). Current studies of the geological sciences can be classified into three principal groups: energy, resources, and environment. An environmentalist requires knowledge of geological materials and of the natural and man-induced processes that affect them to produce for example, landslides, earthquakes and polluted water.

A first appreciation of geology and the environment is provided in the environmental geology course (186-243), while a systematic training for a professional career can follow the honours or major programs in geological sciences with the options in engineering geology and groundwater geology. Greater specialist competence can then be acquired by employment in government agencies, environmental planning organizations, or by graduate work in geology.

METEOROLOGY (Department of). Meteorology is the scientific study of the Earth's atmosphere, obviously a critical component of man's environment. An environmentally-oriented student interested in the atmosphere and in the human influence on it should consider a Major or Honours degree in Meteorology that includes electives such as Engineering courses on combustion and industrial air pollution control and some of the integrating courses on the environment listed below. Degree programs and employment opportunities in Meteorology are described in this Announcement.

FACULTY OF ARTS. Students in the Faculty of Arts have available, in addition to the Department of Geography programs described above, the following courses which are concerned with fundamental questions of man in nature and society, including the impact of technology:

Centre for Continuing Education 674-112X, Y, (3 credits) — Environmental Law for Citizens

Economics 154-425B — Economics of Ecology

Economics 154-327A — Population Analysis in Development Economics

Engineering 300-230A — Environmental Aspects of Technology

Engineering 302-370B — Models of Socio-technical Systems

Geography 183-302D — Environment — Ecosystems and Man

Management 278-484 — The World Economy in the 1980s.

Religious Studies 260-370B — The Human Condition.

Sociology 166-226A — Ecology and Society

Sociology 166-332D — Social Aspects of Development in the Third World.

Additional courses on the environment can be chosen from the list of electives given below. Students in Arts should consult the brochure entitled "Environmental Studies at McGill" which also lists environmentally oriented courses given by Humanities of Science and Social Aspects of Engineering at Concordia University.

FACULTY OF SCIENCE. A number of Faculty Programs in the Faculty of Science should be considered by students with an interest in selected components of the human environment:

Biogeography
Climatology
Dynamics of the Oceans and Atmosphere
Earth Physics A and B
Geomorphology
Hydrology

ELECTIVE COURSES ON THE ENVIRONMENT. The following courses, given by various Faculties, stress the interdisciplinary nature of environmental issues, and are available as electives to students registered in any of the "environmental" programs listed above, as well as to students who wish to have only an overview of environmental problems:

Faculty of Agriculture: 330-310A Food for Man — Agriculture and Society (3 credits)

Faculty of Arts: Sociology — 166-226A — Ecology and Society (3 credits)

Faculty of Engineering: 300-230A — Environmental Aspects of Technology; 302-370B — Models of Socio-Technical Systems.

Faculty of Management: 278-484 — The world economy in the 1980s: prospects and scenarios.

Faculty of Relgious Studies: 260-370B — The Human Condition.

Faculty of Science: Geography 302D — Environment: Ecosystems and Man.

Centre for Continuing Education: 674-112X,Y — Environmental Law for Citizens

These courses are described in detail in a separate brochure entitled "Environmental Studies at McGill" available from the departmental Advisers. This brochure also lists many other courses given by the various Faculties (as well as by Concordia University) that treat selected environmental topics.

Degree programs in other Faculties

AGRICULTURE (Faculty of) (Macdonald College). The Faculty of Agriculture in Ste. Anne de Bellevue offers two environmental degree programs, one with an emphasis on biology-ecology and the other on the total physical-biotic environment of man. Both programs lead to a B.Sc. (Agr.) degree, and enable students to pursue graduate studies in biology, agriculture, and physical geography or to enter employment with government agencies or private firms dealing with biotic and other natural resources.

B.Sc. (AGR.) DEGREE IN BIOLOGICAL SCIENCES — ENVIRONMENTAL BIOLOGY MAJOR. This program aims at training scientists with basic knowledge in biology and strong emphasis in ecology. As ecologists they will be best equipped to investigate the scientific aspects of the relationships between organisms and their environment and they will be less oriented towards the political and sociological components of the ecosystem.

B.Sc. (AGR.) DEGREE IN RENEWABLE RESOURCES DEVELOPMENT — ENVIRONMENTAL CONSERVATION MAJOR. This Major concentrates on the physical environment bringing to bear areas of study such as soil and water management and resource development.

For further details, including courses, pertaining to these two Macdonald College programs, please consult the Announcement of the Faculty of Agriculture.

ENGINEERING (Faculty of). The Faculty* of Engineering offers, for the time being, an "area of concentration" in Pollution Control, which consists of about 15 engineering and non-engineering courses devoted to the technology of pollution control and broader topics related to pollution control. This "area of concentration" may be developed into a pollution-control "minor" once sufficient courses specifically devoted to this subject are available. On the other hand, a degree program in Environmental Engineering is not being considered because in most jurisdictions professional accreditation is confined to the traditional engineering fields. In addition, pollution control requires extensive training in civil and chemical engineering For further details see the Announcement of the Faculty of Engineering.

Students in Arts and Science who are interested in regulatory and pollution-abatement work with private industry or with government should be aware that this type of work requires solid grounding in applied science, in design, and in problem solving, including systems analysis, in other words in the traditional subjects covered by engineering curricula. Most government and industrial positions in the regulatory (setting and enforcement of effluent and ambient standards) and pollution control fields require applicants to be accredited as professional engineers.

2 FACULTY OF ARTS

ADMINISTRATIVE OFFICERS

UNIVERSITY

ROBERT E. BELL, C.C., B.A., M.A.(U.B.C), Ph.D.(McG.), D.Sc.(U.N.B., Laval), LL.D.(Tor.), F.R.S., F.R.S.C. **Principal and Vice-Chancellor**

EIGIL PEDERSEN, B.A. (Sir G. Wms.), M.A. (McG.), Ed.D.(Harv.) **Vice-Principal (Academic)**

LEO YAFFE, B.Sc., M.Sc.(Man.), Ph.D.(McG.), F.C.I.C., F.A.P.S., F.R.S.C. **Vice-Principal (Administration)**

ALLAN C. McCOLL, D.F.C., B.Com.(McG.), C.A. **Vice-Principal (Finance)**

COLIN M. McDOUGALL, D.S.O., B.A.(McG.) **Secretary-General**

JEAN-PAUL SCHULLER, B.A.(Ott.) **Registrar**

PEGGY SHEPPARD, B.Ed.(McG.), B.A.(Sir.G. Wms.) **Director, Admissions Office**

FACULTY

ROBERT VOGEL, B.A. (Sir G. Wms.), M.A., Ph.D. (McG.) **Dean of the Faculty of Arts**

D.C. FRYE, B.A., M.A. (N.Y.U.), Ph.D.(Wis.) **Associate Dean of the Faculty of Arts**

ISOBEL OSWALD, B.A. (McG.) **Assistant Secretary of the Faculty**

KYRA EMO, B.Sc.(McG.) **Coordinator Academic Affairs**

LOUISE W. SMITH, B.A. (Carleton, Minn.), M.A. (Harv.) **Recorder**

ANGELINE LUCAS **Senior Adviser**

LILA WILLIS **Senior Adviser**

PROGRAM INFORMATION

The Faculty of Arts offers the Bachelor of Arts (B.A.) and the Bachelor of Social Work (B.S.W.) degrees.

DEPARTMENTAL MAJORS

The following majors are described in detail in the departmental entries in the Announcement.

ANTHROPOLOGY
ART HISTORY
CLASSICS
ECONOMICS
ENGLISH
FRENCH
GEOGRAPHY
GERMAN
HISTORY
ITALIAN
JEWISH STUDIES
LINGUISTICS
MATHEMATICS
PHILOSOPHY
POLITICAL SCIENCE
PSYCHOLOGY
RELIGIOUS STUDIES
RUSSIAN
SOCIOLOGY
SPANISH

B.A. INTERDISCIPLINARY MAJORS

AFRICAN STUDIES
CANADIAN STUDIES
CENTRE D'ETUDES CANADIENNES FRANÇAISES
CENTRE FOR EAST ASIAN STUDIES
CLASSICS AND LINGUISTICS
HISTORY AND PHILOSOPHY OF SCIENCE
HUMANISTIC STUDIES
INDUSTRIAL RELATIONS
LATIN AMERICAN STUDIES
MIDDLE EAST STUDIES
MODERN LANGUAGES
MODERN LITERATURE
NORTH AMERICAN STUDIES

For further information on the above, consult the alphabetical listings in this Announcement.

B.A. HONOURS

The following Honours programs are described in detail in the departmental entries in this Announcement:

ANTHROPOLOGY
ART HISTORY
CLASSICS
EAST ASIAN STUDIES
ECONOMICS
ENGLISH
FRENCH
GEOGRAPHY
GERMAN
HISTORY
HISTORY AND PHILOSOPHY OF SCIENCE
ITALIAN
JEWISH STUDIES
LINGUISTICS
MATHEMATICS
MIDDLE EAST STUDIES
PHILOSOPHY
POLITICAL SCIENCE
PSYCHOLOGY
RELIGIOUS STUDIES
RUSSIAN
SOCIOLOGY
SPANISH

JOINT HONOURS

Joint Honours programs are available in many related disciplines. Please consult departmental listings.

B.A. FACULTY PROGRAMS

MATHEMATICS AND PHILOSOPHY:

Mathematics 189-217A; 218B; 245A,B; 318A, 328B; 348A, 349B; One of Mathematics 189-222A,B, 314A,B, 323A,B, 324A,B; Three additional credits in Mathematics. One of Philosophy 107-354A and 355B, 107-356A and 357B, 107-360A and 361B, 107-366A and 367B, and two full courses in Philosophy approved by the Department. Nine additional credits in Philosophy. 54 credits. (This faculty program leads to a B.A. degree. Consult the Department of Philosophy to obtain an Adviser.)

MATHEMATICS AND PSYCHOLOGY:

Mathematics 189-222A,B, 223A or 245A,B, 323A,B, 324A,B, 423A, 424B; Psychology 204-302A, 303B, 335A, 336B; 12 credits selected from: Mathematics 189-217A, 218B, 314A,B, 317A, 318A, 327B, 328B, 417A, 447B; 12 credits selected from Psychology courses other than 204-204A,B; 305A,B; 3 credits selected from: Computer Science 308-200A,B, 308-220A,B. (This faculty program leads to either a B.A. or a B.Sc. degree. Consult the Department of Mathematics or the Department of Psychology to obtain an Adviser.)

PSYCHOLOGY GENERAL:

Any of the Major sequences in Psychology with the substitution of 6 credits from U2 courses in Psychology for 204-211D and Psychology 204-305A,B. 54 credits. (Consult the Department of Psychology to obtain an Adviser.)

DEPARTMENTS AND CENTRES OFFERING PROGRAMS IN THE FACULTY

African Studies Program, Leacock Building, Rm. 723A
Anthropology, Leacock Building, Rm. 723
Art History, Arts Building, Rm. W225
Canadian Studies Program, Arts Building, Rm. 220
Centre d'Etudes Canadiennes-Françaises, 3475 Peel Street, Rm. 201
Centre for East Asian Studies, 3434 McTavish St.
Classics, Leacock Building, Rm. 517
East Asian Languages and Literatures, 3434 McTavish St.
Economics, Leacock Building, Rm. 434
English, Arts Building, Rm. 155
French Language and Literature, Peterson Hall, 3460 McTavish Street, Rm. 100
French Language Centre, 3438 McTavish Street, Rm. 205
Geography, Burnside Hall, Rm. 513
German, Samuel Bronfman Bldg., 1001 Sherbrooke St. West
Hispanic Studies, Samuel Bronfman Bldg., 1001 Sherbrooke St. West.
History, Leacock Building, Rm. 625
History and Philosophy of Science Program, Samuel Bronfman Bldg., 1001 Sherbrooke St. West., Rm. 559
Industrial Relations, Samuel Bronfman Bldg., 1001 Sherbrooke St. West, Rm. 514
Italian, Samuel Bronfman Bldg., 1001 Sherbrooke St. West
Jewish Studies Program, 3511 Peel Street, Rm. 103
Linguistics, Samuel Bronfman Bldg., 1001 Sherbrooke St. West, Rm. 584
Mathematics, Burnside Hall, Rm. 1005
Middle East Studies Program, Leacock Building, Rm. 734 or 421
North American Studies Program, Leacock Building, Rm. 434.
Philosophy, Samuel Bronfman Bldg., 1001 Sherbrooke St. West
Political Science, Leacock Building, Rm. 434
Psychology Stewart Biology Building, Rm. W8/1 or W8/8
Religious Studies, William and Henry Birks Bldg., 3520 University Street, Rm. 101
Russian and Slavic Studies, Samuel Bronfman Bldg., 1001 Sherbrooke St. West
Social Work, 3506 University Street, Rm. 300
Sociology, Leacock Building, Rm. 709

DEPARTMENTAL OFFERINGS AND PROGRAMS OF STUDY

For graduate courses in all Departments see the *Announcement of the Faculty of Graduate Studies and Research.*

An official lecture timetable is available before Registration.

The programs and courses described in the following pages have been approved for the 1976-77 session but Faculty reserves the right to introduce changes as may be deemed necessary or desirable.

AFRICAN STUDIES PROGRAM

Advisers — P.C.W. GUTKIND, *Chairman,* African Studies Committee (Anthropology); D.R. ARONSON (Anthropology); M. DORSINVILLE (English); M.J. ECHENBERG (History); F.A. KUNZ (Political Science); A. MAUGEY (French).

Leacock Building, Room 723A, Tel. 392-8049.

The "Interdisciplinary Area Major" in African Studies is designed for those students who wish to take advantage of the growing resources at McGill, and elsewhere in the Montreal area, for the pursuit of an interdisciplinary approach to the African continent.

Students wishing to major in African Studies should consult one of the advisers (see above) at

the beginning of their first academic year. While pursuing their Major, they will be expected to concentrate as well in a regular discipline of the Faculty. Disciplinary specialization is not, however, restricted to those for which an Adviser is listed.

The Major consists of 54 credits (9 full courses or the equivalent), including African Studies 499D in the final year. All the courses listed below must be taken (45 credits), while 9 credits should be selected in consultation with Major Advisers. One or two relevant prerequisites may be included in the total, and the seven should include courses from at least three departments (for full descriptions and prerequisites of courses see listings under individual departments.)

Training in an African language is encouraged, and may form a part of the Major program. Formal training is available at McGill in Arabic. In addition, tapes for the study of Swahili and other languages are available through the Linguistics Department and the Language Laboratory in Peterson Hall.

Modifications in, or additions to, the program from relevant courses in Economics, Education, Geography, Linguistics and other disciplines, may be made with the consent of the African Studies Committee.

The culmination of the Major is the Research Seminar, 111-499D.

Options

Anthropology 151-215A Peoples and Cultures of Africa (3 credits). *Not given 1976-77.*

Anthropology 151-216B Culture and Social Change in Modern Africa. (3 credits).

Economics 154-314B African Economic Development. (3 credits). *Not given 1976-77.*

English 110-320D Third World Literature. (6 credits).

English 110-421A Modern African Literature. (3 credits). *Not given 1976-77.*

History 101-200D A History of Africa. (6 credits).

History 101-430D France and the Africans. (6 credits). *Not given 1976-77.*

Political Science 160-324D Politics and Government in Africa. (6 credits).

Sociology 166-360A National Liberation Movements in Africa. (3 credits). *Not given 1976-77.*

Final Year Requirement

111-499D. Research Seminar in African Studies. (6 credits; *Prerequisite:* Open to Area Majors in good standing, and to others by permission). An interdisciplinary research seminar on topics of common interest to staff and students of the African Studies Program. As part of their contribution, students will prepare a research paper under the supervision of one or more members of the staff.
Staff

ANTHROPOLOGY (151)

Professors — PETER C.W. GUTKIND; RICHARD F. SALISBURY; BRUCE G. TRIGGER *(on leave 1976-77)*

Associate Professors — DAN R. ARONSON *(on leave 1976-77);* FUMIKO IKAWA-SMITH *(Chairman);* PHILIP C. SALZMAN

Assistant Professors — DONALD ATTWOOD; MICHAEL S. BISSON; HARVEY FEIT; CARMEN LAMBERT; JEROME ROUSSEAU

Stephen Leacock Building; Room 723; Telephone 392-5179

The Honours and Major programs in Anthropology provide a liberal arts education which emphasizes the similarity and diversity of human behaviour, understanding of social and cultural systems, and the processes of socio-cultural changes from man's origins to the present day. Although neither the Honours nor the Major programs provide a professional training geared to specific jobs, they may serve as a useful background for those who are planning a career in law, foreign service, community organization, public administration, journalism, and teaching and research in social sciences and humanities. Needless to say, to be a qualified professional in most of these fields requires further training at professional or graduate schools.

While the Major program allows a greater freedom to choose from courses offered by other departments to suit the student's needs and interest, the Honours program provides a greater concentration in anthropology with substantial breadth and depth. It should be noted that the completion of an Honours program is frequently required for admission into graduate or professional schools.

MAJOR PROGRAM

There is no prerequisite for admission into the Major program in Anthropology. The program requires that the student take 10 courses (30 credits) in Anthropology, of which three must be "advanced courses" (400 level) and eight courses (24 credits) in no more than three other departments and which are relevant to the student's program of studies in Anthropology. Contact Department Office for inquiry (392-5176).

HONOURS PROGRAM

In order to continue in the Honours program students must meet the academic standing requirements set forth by the Faculty, and in order to complete the Honours program in Anthropology in the final, graduating year, the grade-point average for the preceding year (usually the U2 year) must be 3.0 or higher for all courses as well as for anthropology courses.

An Honours degree in Anthropology will be granted to a student who has satisfied the requirements of the program and who has an average of 3.0 or better for all the anthropology courses credited towards the program and for all the courses taken during the last two years (usually U2 and U3 years). A First Class Honours degree in Anthropology will be given to a student with an average of 3.5 or better.

An Honours student in Anthropology is required to take 20 anthropology courses (60 credits) of which two can be anthropology courses taken in CEGEP. Up to three of the courses can be courses given by other departments, if they are directly related to the student's focus of study within anthropology and are approved by the student's adviser of the Undergraduate Committee or the Anthropology Department.

The 20 anthropology courses should include at least three of the seven "core courses" (151-353B, 354A, 355B, 356A, 357B, 358A and Linguistics 104-230A); and 151-462A, 463B and/or 464D (in which an honours project is prepared); and at least three other "advanced courses" (400 level courses).

Each student has the opportunity to construct within the Honours program a concentration focused on a particular field of interest, such as prehistory and evolution, cultural systems, social and political organization, or on a particular geographical area, such as Africa, North America, South America or Middle East. Such concentration is made possible by the use of the "Special Topics" courses, in which a student works under the supervision of a staff member in an area not covered by courses currently given. Special Topics courses can be coupled, concurrently or sequentially, with regular courses, under the supervision of the instructors of the regular courses, in order to allow more intensive work in the area covered by regular courses. Papers or projects can be submitted to two or more courses, provided that prior written arrangements have been made with the approval of the student's adviser.

For more information on the Honours program, consult an appropriate adviser on the Undergraduate Committee of the Department, through the Department Office (392-5176).

JOINT HONOURS PROGRAMS

Joint Honours programs are established with Art History, Classics (Classical Archaeology), Economics, English, Geography, History, Linguistics, Middle East Studies, Philosophy, Political Sciences, and Sociology. The Anthropology part of the requirements for these programs is the completion of 11 courses (33 credits) in Anthropology, which must include three of the "core courses" (see above for the Honours program), two "advanced courses" and 151-462A, 463B, or 464D in which an Honours project with an interdisciplinary approach is prepared. For more information on the Anthropology requirements of the joint Honours programs, contact the Department Office (392-5176) which will direct the students to an appropriate adviser on the Undergraduate Committee. For information on the requirements for the other discipline making up the Joint Honours program, consult the department concerned.

COURSE DESCRIPTIONS

First Level Courses

These courses are normally taken during the first year of study in Anthropology and are open to all University students. There are no prerequisites for this group of courses.

151-201A PREHISTORIC CULTURES. (3 credits). Consideration of the origin of cultural behaviour, and culture as adaptive mechanism for human survival. Examination of prehistoric socio-cultural changes in certain selected areas of the world from the earliest times to the rise of urban literate civilizations.
Professor Bisson

151-202A COMPARATIVE LEVELS OF SOCIO-CULTURAL INTEGRATION. (3 credits). The comparison of human societies at different levels of scale and complexity: hunting bands, horticultural and pastoral tribes, agrarian states, and industrial states. How differences in the scale and complexity of social organization and cultural ideology relate to different modes of subsistence.
Professor Attwood

151-203B HUMAN EVOLUTION. (3 credits). An examination of man's biological origins and the significance of his physical diversity. The behaviour of non-human primates, primate evolution, the role of culture in human evolution, racial classifications, the dynamics and behavioural significance of racial variation. (Not open to students who have previously taken 151-303B).
Professor Bisson

151-206D CULTURE AND ADAPTATION. (6 credits). An ecological approach to the study of human society and culture, focussing on anthropological studies and the development of anthropological ecology. Modular course.
Professor Feit

151-209A ANTHROPOLOGY OF RELIGION. (3 credits). Nature and function of religion. Systems of belief; the interpretation of ritual. The relation of religion to social organization. Religious change.
Professor Rousseau

151-210B THE ANTHROPOLOGY OF THE ARTS. (3 credits). *Not given 1976-77.* The arts in cultural context, with special emphasis on non-Western aesthetic systems, the creative process, the purposes and "meanings" of artistic production, and the effects of foreign influences on indigenous art.

Examples will be drawn primarily from the plastic and verbal arts of Africa.
Professor Aronson

151-215A PEOPLES AND CULTURES OF AFRICA. (3 credits). *Not given 1976-77.* An ethnographically-based survey of African cultures. Geographical and historical backgrounds; levels of techno-environmental complexity; patterns in African social organization, economy, politics, religion, and art. Problems of cultural autonomy and structural dependence of contemporary rural peoples. (Not open to students who have previously taken 151-215D).
Professor Aronson

151-216B CULTURE AND SOCIAL CHANGE IN MODERN AFRICA. (3 credits). The impact of colonialism on African societies; changing families, religion, arts; political and economic transformation; migration, urbanization, new social categories; social stratification; the social setting of independence and neo-colonialism; continuity and stagnation, change and progressive change. (Not open to students who have previously taken 151-215D).
Professor Gutkind

151-227A MEDICAL ANTHROPOLOGY. (3 credits). Cross-cultural comparison of Western and other medical practices, and of health, disease and medical practice. Topics include Ethnomedicine, Ethnopharmacology, Transcultural Psychiatry, Physiological Anthropology, and anthropological studies of Nutrition. Medical delivery systems and the roles of doctor and patient in different cultural contexts.
Mr. Murray (of the Department of the History of Medicine)

151-228A AN INTRODUCTION TO EDUCATIONAL ANTHROPOLOGY. (3 credits). Anthropological approaches to the study of education will be delineated using case studies from a wide range of cultural situations including the Canadian North and urban North America. A theoretical analysis of such areas as the transmission of values, the classroom as a unit of socio-cultural analysis, and the role and functions of formal education cross-culturally considered. *Not given in 1976-77.*
Staff

151-236B INDIGENOUS PEOPLES OF NORTH AMERICA. (3 credits; linked course with Geography 183-236A — both must be taken to earn credit for either). Analysis of the patterns and processes of culture change within selected groups of North American Native People. Emphasis upon conditions arising from contact and its impact on social, economic and political patterns of adaptation. (Not open to students who have taken 151-236D or 183-336D).
Professor Lambert

Intermediate Courses

Prerequisite: One anthropology course, which is, in some cases, specified.

151-301A PALEOLITHIC CULTURES OF EUROPE (3 credits; *Prerequisite:* 151-201 or the consent of the instructor). The Stone Age cultures of Europe from about 800,000 B.C. to the beginnings of agriculture at about 10,000 B.C. Archeological sequences of the major geographic subdivisions of Europe in the light of changing human adaptations. Laboratory sessions.
Professor Bisson

151-302B THE HISTORY OF ANTHROPOLOGICAL THEORY. (3 credits). Explorations in the history of anthropological theory; schools, controversies, intellectual history, sociology of knowledge. (Not open to students who have previously taken 151-402B).
Professor Salisbury

151-308A POLITICAL ANTHROPOLOGY. (3 credits). The study of political systems and political processes. Conflict and its resolution. The emphasis of the courses will be on communal politics and non-Western states.
Professor Attwood

151-313B SOCIAL INSTITUTIONS OF THE EARLY CIVILIZATIONS. (3 credits). *Not given in 1976-77.* A comparative study of the differing social, economic and political institutions of the early civilizations in Mesopotamia, Egypt, India, China and the New World; their historical interconnections and development from Neolithic times to the early historic period.
Professor Trigger

151-314A AN INTRODUCTION TO PSYCHOLOGICAL ANTHROPOLOGY. (3 credits). A survey of current theories and methods employed in psychological anthropology. Some areas considered are: cross-cultural studies of socialization and personality development; cultural factors in mental illness; individual adaptations to rapid socio-cultural change. *Not given 1976-77.*
Staff

151-316B ANTHROPOLOGY OF COMPLEX SOCIETIES. (3 credits). *Not given in 1976-77.* Selected topics in the study of complex societies; rural-urban continuum migration and adaptation to urban life, poverty culture, cultural scenes. Evaluation of anthropological approaches to the study of complex society.
Staff

151-317A THE PREHISTORY OF NORTH AMERICA. (3 credits; *Prerequisite:* 151-201A or 151-203B or equivalent). Peopling of the New World and the Old World; origins of the early Lithic cultures; cultural adaptations in grasslands, woodland, desert and maritime environments; consideration of factors

that favoured the shifts from hunting-gathering to agriculture and the rise of civilizations in Mesoamerica.
Professor Ikawa-Smith

151-321A URBAN ANTHROPOLOGY. (3 credits). A comparative analysis of urbanization in Africa, Asia and Latin America; rural urban migrations; the demography and institutional structures of urban areas; tribalism in towns; status, class and elites in towns; family structure; urban network analysis; urban based associations; the role of the city in national development.
Professor Gutkind

151-324B ECONOMIC ANTHROPOLOGY. (3 credits). *Not given in 1976-77.* Systems of production, distribution, and consumption in non-industrial societies. Social relationships and economic behaviour as viewed from the perspective of the individual, or small community, in peasant and industrial societies. (Not open to students who have taken 151-424B).
Professor Salisbury

151-326A NATIVE PEOPLES OF SOUTH AMERICA. (3 credits). Ethnographic survey of the native peoples of South America and discussion of some of the major themes in South American ethnology including the present political situation of the Indians.
Staff

151-327A PEOPLES OF SOUTH ASIA. (3 credits). A survey of the peoples and cultures of the Indian sub-continent. Detailed consideration will be given to agrarian social structure and stratification (in terms of caste, class and power), with emphasis on the changes caused by colonialism and modernization.
Professor Attwood

151-331B PREHISTORY OF EAST ASIA. (3 credits). Comparative study of prehistoric hunting and gathering cultures in China, Japan, Korea, Mongolia and Eastern Siberia; origins and dispersal of food production; cultural processes leading to the rise of literate civilizations in certain regions of East Asia.
Professor Ikawa-Smith

151-333B. CLASS AND ETHNICITY: HISTORY, STRUCTURE, AND FUNCTION. (3 credits.) The genesis and development of ethnic groups and social classes; modes of production, social formations and the question of "consciousness." The functions of ethnicity and class in political conflict, with special reference to the Third World.
Professor Gutkind

Core Courses

Restricted to Honours, Joint Honours and Majors students in anthropology and those with the permission of the instructor

151-353B CULTURE AND COERCION: SOCIAL CONTROL IN PREINDUSTRIAL SOCIETY. (3 credits). An inquiry into the factors that contribute to the maintenance of the social order. Socialization, reciprocity, conflict resolution, and coercion are among the elements examined.
Professor Salzman

151-354A SOCIAL ORGANIZATION. (3 credits). Comparative study of human group formation; ethnicity. The role of kinship and marriage in interpersonal relations. Social stratification.
Professor

151-355B THE STRUCTURE OF CULTURE. (3 credits). The formal analysis of cultural systems, the patterning and integration of cultural, ethos and value systems.
Staff

151-357B ARCHAEOLOGICAL METHODS. (3 credits). The collection of materials in field investigations and their analysis to yeild cultural information. The processes of inferences and reconstruction in archaeological interpretation.
Professor Bisson

151-358A INTRODUCTION TO RESEARCH. (3 credits). The nature of anthropological research as evidenced in monographs and articles; processes of concept formation and interpretation of data; the problem of objectivity.
Professor Salisbury

151-359A HISTORY OF ARCHAEOLOGICAL THEORY. (3 credits; *Prerequisite:* 151-201B, or 151-203A or permission of instructor). *Not given in 1976-77.* A systematic investigation of the theories that have guided the interpretation of prehistoric archaeological data since the time of Christian Thomsen; the relationship between these theories and the development of archaeological techniques; and their relationship to theoretical developments in the other social sciences.
Professor Trigger

151-380A, 151-381B, 151-382A, 151-383B SPECIAL TOPICS. (3 credits each, *Prerequisite:* Permission of instructor). Supervised reading in special topics under the direction of a member of the staff.
Staff

Advanced Courses

Prerequisite: at least one 300-level anthropology course, which, in some cases, is specified.

151-403B CURRENT PROBLEMS IN ARCHAEOLOGICAL THEORY. (3 credits; *Prerequisite:* 151-356A or 151-357B). *Not given in 1976-77.* A seminar dealing with current issues concerning reconstruction of socio-cultural systems from archaeological data. Topics include "economic vs. cultural models", the "systemic approach," ecosystem analysis, problems of

taxonomy and classification, and quantitative methods.
Professor Ikawa-Smith

151-406A TOPICS IN CULTURAL ECOLOGY. (3 credits; *Prerequisite:*151-206B or permission of the instructor). One aspect of society and culture — such as division of labour, cognition, population size and density, authority structures, religion, and socialization — will be examined from an ecological point of view. *Not given 1976-77.*

151-412A SEMINAR ON CONTEMPORARY THEORY. (3 credits). An exploration of major contemporary theoretical approaches in socio-cultural anthropology, such as symbolic analysis, transactionalism, cultural materialism and conflict theory. Important works by the professors of these various theoretical approaches will be closely examined.
Professor Salzman

151-413B DECIPHERMENT OF ANCIENT SCRIPTS. (3 credits; *Prerequisite:* At least two and preferably three lower level courses in anthropology including 151-313B; 356A; or 357B). *Not given in 1976-77.* This seminar will examine the problems involved in the decipherment and translation of the scripts of "forgotten" languages associated with early civilizations. Considerable attention will be given to the nature of early writing systems. Practical work will be concentrated on Meroitic; the earliest known written language of sub-Saharan Africa.
Professor Trigger

151-415A PROBLEMS IN AFRICAN ANTHROPOLOGY. (3 credits; *Prerequisite:* 151-215A, 151-216B or consent of the instructor). *Not given in 1976-77.* A detailed examination of the peoples and cultures of a major region of Africa, with attention to problems in ethnology, social change and development.
Professor Aronson

151-420B THE USE OF MATHEMATICS IN ANTHROPOLOGY. (3 credits; *Prerequisite:* Introductory statistics or permission of instructor). This course will review past and present applications of mathematics to anthropology, particularly social and cultural anthropology, and secondarily archaeology. The following topics will be considered: statistical testing; problems of measurement; the application of systems theory and games theory; the use and misuse of mechanical methods for the analysis of data.
Professor Rousseau

151-421A TOPICS IN URBAN ANTHROPOLOGY. (3 credits; *Prerequisite:* 151-321B or consent of the instructor). *Not given in 1976-77.*
Staff

151-422A HISTORY, IDEOLOGY AND THEORY IN SOCIAL CHANGE AND MODERNIZATION OF NON-WESTERN SOCIETIES. (3 credits). *Not given in 1976-77.* Socio-cultural perspectives on Colonialism and policies; their impact on preindustrial societies; the structure and dialectic of modernization processes and their impact, ideology and discontent.
Professor Gutkind

151-423A IDEOLOGY AND CONCEPTS IN SOCIAL ANTHROPOLOGY (3 credits). *Prerequisite:* Honours or major status or permission of instructor). *Not given in 1976-77.* Ideology and Social Science Theory in relation to problem formation in Social Anthropology; the spill-over from romanticism, imperialism, colonialism, neo-colonialism and radicalism to the outlook and problems studied by social anthropologists, traditional limits and the "New Anthropology". Multi- and interdisciplinary studies.
Professor Gutkind

151-425A ADVANCED TOPICS IN ECONOMIC ANTHROPOLOGY. (3 credits). *Not given in 1976-77.* Discussion of selected topics in modern economic anthropology.
Professor Salisbury

151-426B SEMINAR ON SOUTH AMERICAN ETHNOLOGY. (3 credits; *Prerequisite:* 151-326A, or permission of instructor). Seminar centred on some of the main problems of modern research in the study of South American Indian societies and cultures.
Staff

151-427B SEMINAR ON SOCIAL CHANGE IN SOUTH ASIA. (3 credits; *Prerequisite:* a course with South Asian content, such as 151-327A; 151-308A; 160-322A; 154-301B; 260-451D; or permission of the instructor). Aspects of social change in modern India: caste and ethnic movements, religious movements, agrarian movements, social reformism; rural economic development; factions and parties, local elites. Colonialism, nationalism, and development.
Professor Attwood

151-429B ADVANCED TOPICS IN THE STUDY OF LATIN AMERICA. (3 credits; *Prerequisite:* 151-326A or consent of the instructor). *Not given in 1976-77.* A detailed examination of selected topics of Latin American society and culture.
Staff

151-436A SEMINAR ON NORTH AMERICAN NATIVE PEOPLE. (3 credits; *Prerequisite:* 151-236D). A detailed examination of selected contemporary problems.
Professor Lambert

151-437B ANTHROPOLOGICAL APPROACHES TO CULTURE CHANGE. (3 credits). Consideration of anthropological approaches to directed culture change through a survey and analysis of relevant case materials. History of directed culture change; introduction to theoretical, methodological and ethical issues involved in and deriving from studies of and participation in directed culture change. Role of anthropologists as initiators or participants in,

and/or evaluators of directed culture change: past, present and future.
Professor Lambert

151-440A SEMINAR IN THE ANTHROPOLOGY OF COGNITION: I. (3 credits). Investigation into how people perceive and organise phenomena. Physiological, psychological, linguistic, social and ideological factors in cognition. Affect and percept; belief and knowledge. Philosophical, psychoanalytic, structuralist and marxist approaches to cognition. Cognitive structure and process.
Professor Rousseau

151-441B SEMINAR IN THE ANTHROPOLOGY OF COGNITION: II (3 credits). A detailed examination and discussion of selected topics in the Anthropology of Cognition.
Staff

151-445B SEMINAR ON MIDDLE EASTERN SOCIETY AND CULTURE. (3 credits). The ethnography and social anthropology of the Middle East, with special attention to life at the community level and to community-society relations. Such questions as "urban-peasant-tribe" relations, arid land adaptation, the role of folk Islam, and the place of women.
Professor Salzman

151-447B EARLY PREHISTORY OF THE NEW WORLD (3 credits; *Prerequisite:* Anthropology 151-317A). Detailed examination of selected aspects of the early prehistory of the New World. Specific geographical areas or topical issues may vary from year to year. In 1976-77: archeological problems pertaining to the Arctic and Subarctic regions.
Professor Ikawa-Smith

151-448A SETTLEMENT ARCHAEOLOGY. (3 credits; *Prerequisites:* at least two, and preferably three lower level courses in anthropology, including 151-356A or 151-357B). *Not given 1976-77.* This course will examine theories that have been developed in recent years concerning human settlement and evaluate the utility of these theories for deriving a variety of kinds of cultural information from spatial distributions of archaeological data. Special attention will be given to factors affecting the evolution of settlement units, from which a more general theory of settlement may be derived.
Professor Trigger

151-450B THIRD WORLD PEASANTRIES: THE CHANGE FROM RURALITY TO URBAN PROLETARIANS. (3 credits; *Prerequisites:* 151-308B or 151-354A, plus one area course, or permission of the instructor). *Not given in 1976-77.* Review of recent anthropological literature, as well as the approaches of social history and political economy, focusing on external and internal forces instrumental in transforming peasantries into urban proletarians in "Third World" nations. Analysis of fission and fusion processes, stratification, class, rural and urban protest and mechanisms of incorporation of small units in larger political domains.
Professor Gutkind

151-461B RESEARCH TECHNIQUES. (3 credits; *Prerequisite:* consent of the instructor). Field techniques, interviewing, participant observation, projective, and other testing techniques such as genealogies and life histories, problems of field work, rapport, contact, role definition, culture shock, etc. *Not given in 1976-77.*
Staff

151-462A, 151-463B, 151-464D. INDEPENDENT RESEARCH. (3, 3, and 6 credits respectively; Prerequisites: U3 Honours status and permission of the instructor). Supervised reading and preparation of a research report under the direction of a member of staff.
Staff

151-480A, 481B, 482A, 483B, 484A, 485B SPECIAL TOPICS. (3 credits each. *Prerequisite:* Completion of all available courses relevant to the topic and consent of the instructor). Supervised reading in advanced special topics under direction of a member of staff.
Staff

ARABIC (397)

397-100D INTRODUCTION TO LITERARY ARABIC. (6 credits: 5 hours, 1 hour laboratory). The Arabic alphabet, pronunciation, principles of grammar, basic vocabulary, reading selections, simple composition and oral drills.

397-200D ELEMENTARY ARABIC. (6 credits; 4 hours). Further grammar and drills, reading in modern and classical Arabic, composition and oral drills.

397-300D INTERMEDIATE ARABIC. (6 credits).

397-400D ADVANCED ARABIC. (6 credits).

ART HISTORY (123)

Professors — WINTHROP JUDKINS *(Chairman)*; GEORGE GALAVARIS
Associate Professors — RIGAS BERTOS; ROSE-MARIE BERGMANN
Assistant Professors — RHODRI LISCOMBE; THOMAS GLEN
Lecturer — ROBERT LANGSTADT

Arts Building W-225 (West Wing, top floor); Telephone: 392-4977.

The Department of Art History at McGill is concerned almost exclusively with the historical-critical study of architecture, sculpture and the two-dimensional arts from ancient times to the present. These arts are treated as an illumination of history — as a visual embodiment and expression of the philosophical, religious, intellectual and social trends of

the successive historical periods. The student is thus given an introduction to the richness, scope and significance of our historical and cultural heritage. At the same time the monuments are treated both as products of creative expression and as objects of aesthetic quality, providing the student with a basis for both receptivity to artistic communication and sound critical judgement.

A single, introductory, non-professional studio course is offered primarily as a supplement to the historical-critical study of the subject.

The Department offers major, honours, joint-honours and graduate programs. The major program provides a broad basis in the history and criticism of art, but at the same time retains considerable flexibility enabling the student to participate in the many other disciplines in the humanities and social sciences with which art history is characteristically related. The honours program, while almost equally flexible, offers a deeper and more comprehensive penetration of the subject and provides the necessary foundation for those intending to continue into graduate studies in the discipline. But it is intended also for the undergraduate desiring a more cohesive and challenging intellectual experience and development.

MAJOR IN ART HISTORY

There are no pre-University requirements for this program.

The student majoring in Art History will take at least 30 and not more than 36 credits in Art History of which not more that 12 may be elected in the First year. Also with the approval of his Faculty Adviser, the student will choose 24 additional credits in at most 3 disciplines in the Humanities and/or Social Sciences, complementary to the study of Art History.

Adviser: Professor Bertos, Arts W-265, Telephone: 392-4976.

HONOURS IN ART HISTORY

There are no pre-University requirements for this program.

To qualify for the Honours degree in Art History candidates must pass 36 credits, four Honours seminars (twelve credits), and the Honours comprehensive examinations.

In the first University year, the candidate will take at least 12, at most 18, Art History credits. In each of the second and third University years the student will normally take 12 Art History credits and two Honours seminars (3 credits each). At the end of the final University year, in addition to writing the final examinations in their Art History courses, Honours students, having prepared themselves in the areas not covered by their formal courses, must pass the Honours comprehensive written and oral examinations.

The passing mark for Honours standing in Art History is a GPA of 3.0. For promotion to the second university year, candidates must attain a GPA of 3.0 in their first university year Art History courses and marks not below C in each of their other courses. Qualification for the Honours degree requires a CGPA of 3.0 in all Art History courses and seminars taken, with not more than two of these in the C category and at least a C average in all non-Art History courses.

Honours students intending to proceed to graduate studies will be encouraged to begin the study of a third language recommended by the Department. (Note: courses in studio practice do not count towards the Honours degree.)

Adviser: Professor Judkins, Arts W-230, telephone: 392-4975.

JOINT HONOURS

There are no fixed pre-University requirements for these programs.

Proposals by qualified students for Joint Honours studies in Art History and certain appropriately related subjects may be submitted for consideration jointly by the Chairmen of the Departments concerned.

Adviser: Professor Judkins, Arts W-230, telephone: 392-4975.

COURSE DESCRIPTIONS

123-200D FORM AND MEANING. (6 credits). Dealing broadly in terms of painting, sculpture and architecture, the aim of this course is to develop the student's perception and understanding of the work of art - both as a visual medium of expression and as a crystallization of its historical and cultural context.
Professors Judkins, Bergmann and Liscombe

123-026D FUNDAMENTALS IN DRAWING AND PAINTING. (6 credits; No previous training or experience is expected). The purpose of the course is to develop the creative sensibilities of students by introducing them, through studio work, to basic principles of drawing, painting and sculpture.
Mr. Langstadt

NOTE: Enrolment in this course is limited to fifty students (two sections of twenty-five students each). All registered students must come to the first scheduled meeting of the section of their choice. Only then (not before) will selection, by lot, from among those present, be made. Except by special consent of the instructor, supplemental assessments will not be given in this course.

123-210A INTRODUCTION TO THE ARTS OF EGYPT AND MESOPOTAMIA. (3 credits). *Not given in 1976-77.* A survey of the arts in these countries from their origins down to the Hellinization of Egypt. Emphasis is placed on the relation of the arts to monarchy, religion, physical conditions and spiritual life.
Professor Galavaris

123-211A EARLY AND CLASSICAL GREEK ART AND ARCHAEOLOGY. (3 credits). A selective survey of the slow emergence of the visual arts in the Hellenic world after the Mycenean Age and their transformation to the end of the fourth century. Emphasis is placed upon the cultural significance of this phase of Greek civilization for modern man.
Professor Galavaris

123-212B HELLENISTIC GREEK AND ROMAN ART AND ARCHAEOLOGY. (3 credits). The spirit of the forms in the visual arts discussed as manifestations of a new world-view that became predominant from the time of Alexander's conquests to the appearance of Christian Art. Emphasis is placed on Rome's contribution to the classical tradition.
Professor Galavaris

123-222D RENAISSANCE AND POST-RENAISSANCE SCULPTURE. (6 credits). *Not given in 1976-77.* European sculpture of the fifteenth through the nineteenth centuries with emphasis upon the works of the principal sculptors. Attention will be given to the special problems involved in the three-dimensional expression of styles in art.
Staff

123-223A EARLY RENAISSANCE ART IN ITALY. (3 credits). The emergence of a new concept of art in Italy during the 15th century expressed in the works of the most important artists of the period. Special consideration will be given to the relationship of the visual arts to the classical tradition and to contemporary literature, philosophy and social conditions.
Professor Bertos

123-224B HIGH RENAISSANCE ART IN ITALY. (3 credits). A systematic investigation of Italian art of the 16th century — one of the most important periods in art history. Attention will be given also to the relation of the visual arts to contemporary intellectual and social trends.
Professor Bertos

123-312D MEDIEVAL ART. (6 credits). Medieval man's world view as manifested in the Fine Arts and their relationship to other expressions of Medieval civilization such as religion and philosophy. The course begins with the art of the Early Church, continues with that of Byzantium, and concludes with the visual arts embodied in the "Medieval Cathedral". (Not open to students who have taken 123-312A or 123-313B).
Professor Galavaris

123-315D GOTHIC ARCHITECTURE. (6 credits). *Not given in 1976-77.* A study of Gothic architecture with special emphasis upon its contemporary literary documents and upon the analysis of the form and structure of the major monuments. This will be followed by a critical evaluation of modern interpretations of Gothic architecture.
Staff

123-316A THE ARCHITECTURE OF THE CITY AND CITY PLANNING. (3 credits). *Not given in 1976-77.* A survey of the development of the architecture of the city from the Greeks and Romans through the end of the eighteenth century. Special attention will be given to the study of the development of specific cities as well as to theoretical writings by architects on city planning.
Staff

123-332A RENAISSANCE ARCHITECTURE. (3 credits). *Not given in 1976-77.* An analysis of the influence of Renaissance culture and artistic theory upon European architecture in the 15th and 16th centuries. Particular emphasis will be given to the evolution of the style in Italy and to the changing interpretation of antique architecture.
Professor Liscombe

123-333D BAROQUE AND ROCOCO ARCHITECTURE. (6 credits). A study of the evolution of the Baroque and Rococo styles and of the Classical reaction represented by Palladianism and the Neo-Classical Movement. Architectural design will be studied in the context of contemporary painting and sculpture, and theories of art. (Not open to students who have taken 123-333A).
Professor Liscombe

123-334D EUROPEAN ART OF THE 17TH AND EARLY 18TH CENTURIES. (6 credits). The emergence of the Baroque in Italy, its development throughout Europe, and artistic tastes in the 18th century. Attention is given to the relationships between the visual arts and other aspects of the intellectual, religious and social life of these centuries.
Professor Glen

123-335A NEOCLASSICISM AND ROMANTICISM. (3 credits). A study of painting and sculpture from the mid-18th through the mid-19th centuries in the context of the intellectual, social and political climate of the age. Particular emphasis is placed on the work of such major figures as David, Ingres, Delacroix, Canova and Friedrich.
Professor Glen

123-336B REALISM, IMPRESSIONISM, NEO-IMPRESSIONISM AND POST-IMPRESSIONISM. (3 credits). An investigation of the principal artistic movements in Europe during the second half of the nineteenth century.
Professor Glen

123-337D MODERN PAINTING AND SCULPTURE. (6 credits). The modern movement in art; its late nineteenth century emergence, problems, character and place in the continuity of art history.
Professor Judkins

123-343D RENAISSANCE PAINTING OF NORTHERN EUROPE. (6 credits). The development from Late Gothic to Renaissance, principally through the emergence of the Flemish and German schools in the 15th and 16th centuries, respectively.

The monuments are examined within the changing religious and social climate of the times. (Not open to students who have taken 123-343A or 123-344B).
Professor Bergmann

123-347A TRADITION AND INNOVATION IN 19TH CENTURY ARCHITECTURE. (3 credits). *Not given in 1976-77.* An historical review of European and North American architecture from 1750 to 1880, concentrating upon the major stylistic movements, Neo-Classicism and the Greek and Gothic Revivals, and the impact on design of social and technological change.
Professor Liscombe

123-348A 20TH CENTURY ARCHITECTURE: IDEALS AND ACHIEVEMENTS. (3 credits). An examination of the main themes of architectural theory and practice from 1880-1970. Emphasis will be placed upon important centres, such as Chicago, significant groups, notably the Bauhaus, and celebrated individual architects of the calibre of F.L. Wright.
Professor Liscombe

123-349B THE ART OF THE PRINT. (3 credits). *Not given in 1976-77.* The historical development of the graphic arts in the west from the 15th through the 20th centuries with emphasis on the relation between print medium and artistic expression in such major graphic artists as Dürer, Rembrandt, Goya and Blake.
Professor Bergmann

123-414D WESTERN MEDIEVAL PAINTING. (6 credits). *Not given in 1976-77.* (Also open to First-year graduate students.) A systematic study of the important centres and media (book painting, fresco, stained glass, etc.) of Medieval "Painting" from Carolingian through High Gothic times. The works of art are studied in relation to the religious spirit and social climate in which they were created.
Professor Bergmann

123-430A EVOLVING CONCEPTS OF THE DISCIPLINE OF ART HISTORY. (3 credits). *Not given in 1976-77.* The historical development of approaches and methods employed by art historians since the Eighteenth century. The emergence of Art History as a systematic discipline in the Humanities — its contributions, responsibilities and present status.
Professor Bertos

123-440D THE VISUAL LANGUAGE OF ARTISTIC EXPRESSION. (6 credits). *Not given in 1976-77.* (Also open to First-year graduate students.) A detailed analysis of the nature, technicalities and functions of the factors of Representation, Design and Medium, including their evolving historical development, in combination with a study of their interactive synthesis in the total work, including comparative examination of the principal extant interpretations of the synthesis factor.
Professor Judkins

HONOURS SEMINARS. (3 credits each). Honours candidates in their Second and Third University years will undertake special studies (the work consisting of recommended reading, written papers and discussions) in certain of the following areas as advised by the Department. (6 credits in each year). Seminar offerings for the current session are obtainable from the Department office.

123-362/462A STUDIES IN ANCIENT AND EARLY MEDIEVAL ART. (3 credits).
Professor Galavaris

123-363/463B STUDIES IN ANCIENT AND EARLY MEDIEVAL ART. (3 credits).
Professor Galavaris

123-364/464A STUDIES IN LATER MEDIEVAL ART. (3 credits).
Professor Bergmann

123-365/465B STUDIES IN LATER MEDIEVAL ART. (3 credits).
Professor Bergmann

123-366/466A STUDIES IN ITALIAN RENAISSANCE ART. (3 credits).
Professor Bertos

123-367/467B STUDIES IN ITALIAN RENAISSANCE ART. (3 credits).
Professor Bertos

123-368/468A STUDIES IN NORTHERN RENAISSANCE ART. (3 credits).
Professor Bergmann

123-369/469B STUDIES IN NORTHERN RENAISSANCE ART. (3 credits).
Professor Bergmann

123-372/472A STUDIES IN 17TH AND EARLY 18TH CENTURY ART. (3 credits).
Professor Glen; Professor Liscombe

123-373/473B STUDIES IN 17TH AND EARLY 18TH CENTURY ART. (3 credits).
Professor Glen; Professor Liscombe

123-374/474A STUDIES IN LATER 18TH AND 19TH CENTURY ART. (3 credits).
Professor Glen; Professor Liscombe

123-375/475B STUDIES IN LATER 18TH AND 19TH CENTURY ART. (3 credits).
Professor Glen; Professor Liscombe

123-378/478A STUDIES IN MODERN ART AND THEORETICAL PROBLEMS. (3 credits).
Professor Judkins

123-379/479B STUDIES IN MODERN ART AND THEORETICAL PROBLEMS. (3 credits).
Professor Judkins

CANADIAN STUDIES PROGRAM

Co-ordinator — A. LUCAS (English)
Co-ordinating Committee — J.R. MALLORY (Political Science); P. McNALLY (Library Science); C. MILLER (History); J. GILMOUR (Geography); R.T. NAYLOR (Economics); B.G. TRIGGER (Anthropology)

Arts Building, Room 220; telephone: 392-5005

The Canadian Studies Program attempts to provide students with a comprehensive, interdisciplinary view of the nature and growth of Canadian civilization.

Students registered in this program will take fifty-four credits from the list below, six of which shall be from History, six from Literature, and six from a Social Science.

Please consult Professor Lucas, English Department.

COURSES

Prerequisites are required for most courses above the 200 level. Students lacking prerequisites or written permission from the course instructor may be required to drop courses.

Anthropology

151-236B INDIGENOUS PEOPLES OF NORTH AMERICA. (3 credits; *Prerequisite:* 183-236A required to obtain credits for either).

Architecture

301-372B HISTORY OF ARCHITECTURE IN CANADA. (2 credits; Prerequisite: 301-102B).

Economics

154-200D ECONOMIC ANALYSIS AND APPLICATIONS. (6 credits). This course is prerequisite to all upper level courses in Economics except those for which other provision is made in the course description.

154-205D AN INTRODUCTION TO APPLIED POLITICAL ECONOMY. (6 credits: *Prerequisite:* 154-200D or consent of instructor).

154-211D INTRODUCTION TO CANADIAN ECONOMIC HISTORY. (6 credits; *Prerequisite:* 154-200D or consent of instructor).

154-302D MONEY AND BANKING. (6 credits).

154-304D CANADIAN ECONOMIC POLICY. (6 credits).

154-305D GOVERNMENT AND BUSINESS. (6 credits).

154-306D LABOUR ECONOMICS AND INSTITUTIONS. (6 credits).

154-311D NORTH AMERICAN ECONOMIC DEVELOPMENT. (6 credits; *Prerequisite:* 154-200D or 154-201D).

154-312D POLITICAL ECONOMY OF DEPENDENCE IN THE WESTERN HEMISPHERE. (6 credits).

154-321D THE QUEBEC ECONOMY. (6 credits; Prerequisite: 154-200D or 154-205D or 154-211D)

154-404D TRANSPORTATION. (6 credits).

154-408D PUBLIC FINANCE. (6 credits).

154-411B THE QUEBEC ECONOMY. (3 credits).

154-431A CANADIAN ECONOMIC HISTORY. (3 credits; Prerequisites: 154-200D and 211D or consent of instructor.)

154-434A CURRENT ECONOMIC PROBLEMS. (3 credits; Prerequisite: 154-200D)

154-468A URBAN AND REGIONAL ECONOMICS. (3 credits).

English

110-228A CANADIAN LITERATURE I. (3 credits).

110-229B CANADIAN LITERATURE II. (3 credits).

110-327D THE DEVELOPMENT OF PROSE FICTION IN CANADIAN LITERATURE. (6 credits).

110-329D 20TH CENTURY CANADIAN LITERATURE. (6 credits).

110-527A CANADIAN LITERATURE. (3 credits).

110-528B CANADIAN LITERATURE. (3 credits).

French

125-204A CIVILISATION QUEBECOISE I. (3 crédits).

125-205B CIVILISATION QUEBECOISE II. (3 crédits).

125-208A LITTERATURE QUEBECOISE CONTEMPORAINE I. (3 crédits).

125-209B LITTERATURE QUEBECOISE CONTEMPORAIRE II (3 crédits).

125-315A,B CINEMA QUEBECOIS (3 crédits).

125-328D HISTOIRE DE LA CIVILISATION QUEBECOISE (6 crédits).

125-370A LITTERATURE QUEBECOISE JUSQU'EN 1940. (3 crédits).

125-371B LITTERATURE QUEBECOISE DEPUIS 1940. (3 crédits).

125-372D ROMAN QUEBECOIS JUSQU'EN 1945. (6 crédits).

125-373B ROMAN QUEBECOIS (1945-60). (3 crédits).

125-375D THEATRE QUEBECOIS. (6 crédits).

125-377A LA CRITIQUE LITTERAIRE QUEBECOISE. (3 crédits).

125-378A LE CONTE QUEBECOIS. (3 crédits).

125-382D ROMAN QUEBECOIS DEPUIS 1960. (6 crédits).

125-470A POESIE QUEBECOISE DE CREMAZIE A SAINT-DENYS-GARNEAU. (3 crédits).

125-471B POESIE QUEBECOISE D'ALAIN GRANDBOIS A NOS JOURS (DEPUIS 1940). (3 crédits).

125-485A ESSAI QUEBECOIS AVANT 1960. (3 crédits).

125-486B ESSAI QUEBECOIS DEPUIS 1960. (3 crédits).

French Canada Studies Program

(See Centre d'Etudes Canadiennes-Françaises).

Geography

183-236A INDIGENOUS PEOPLES OF NORTH AMERICA. (3 credits). Linked with 151-236B (both must be taken).

183-309A CANADA: ITS GEOGRAPHIC FOUNDATIONS. (3 credits).

183-311B GEOGRAPHIC ATTRIBUTES OF THE CANADIAN ECONOMY. (3 credits).

183-325A PHYSICAL GEOGRAPHY OF QUEBEC. (3 credits).

183-326B HUMAN GEOGRAPHY OF QUEBEC. (3 credits).

183-401A GEOGRAPHY OF NORTHERN LANDS. (3 credits; Prerequisite: An Introductory course or 151-236B and 183-236A).

183-403B NORTHERN CULTURAL SYSTEMS. (3 credits; Prerequisites: 151-236B and 183-236A, or 183-410A, or permission of instructor).

History

101-202A CANADA TO 1867. (3 credits).

101-203B CANADA SINCE 1867. (3 credits).

101-303A QUEBEC SINCE 1840. (3 credits; Prerequisites: 101-202D (202A and 203B or consent of instructor).

101-332D CANADA AND THE BIRTH OF CONFEDERATION. (6 credits; *Prerequisite:* 101-202D or consent of instructor).

101-352D EMERGENCE OF ENGLISH CANADA: 1791-1867. (6 credits, *Prerequisite:* 101-202D or consent of instructor).

101-353D WAR AND SOCIETY IN CANADIAN HISTORY. (6 credits; *Prerequisite:* 101-202D. This course is not open to candidates who have previously taken 101-372D).

101-362D THE WEST AND THE NORTH IN CANADIAN HISTORY. (6 credits; *Prerequisite:* 101-202D).

101-363D CONTEMPORARY CANADA. 1890-1970. (6 credits, *Prerequisite:* 101-202D or equivalent, or consent of instructor. This course is not open to candidates who have previously taken 101-302A and 312B).

101-403D THE COMING OF THE QUIET REVOLUTION. (6 credits; *Prerequisites:* Any course in Canadian or Quebec history. A reading and speaking knowledge of French is essential).

Music

214-391A CANADIAN MUSIC. (3 credits; *Prerequisite:* 214-184A and 214-185B or consent of instructor).

Philosophy

107-221B INTRODUCTION TO HISTORY AND PHILOSOPHY OF SCIENCE PART II. (3 credits).

Political Science

160-211D COMPARATIVE GOVERNMENT AND POLITICS. (6 credits).

160-221D GOVERNMENT OF CANADA. (6 credits).

160-320A CANADIAN POLITICAL PROCESS. (3 credits; *Prerequisite:* 160-211D).

160-337B CANADIAN PUBLIC ADMINISTRATION. (3 credits; *Prerequisite:* At least one other course in Canadian government or politics).

160-415B POLITICAL PARTIES. (3 credits; *Prerequisite:* One other course in Comparative Government).

160-418A ELITES AND POLITICS. (3 credits); Prerequisite: At least one course in Canadian or comparative government and politics).

160-426B POLITICAL ATTITUDES AND BEHAVIOUR IN QUEBEC. (3 credits).

Social Work

407-352B THE SOCIAL SERVICES IN CANADA. (3 credits).

407-457B LEGAL PROBLEMS OF THE POOR. (3 credits).

Sociology

166-210A INTRODUCTION TO SOCIOLOGY. (3 credits).

166-214B INTRODUCTION TO SOCIOLOGY: CANADIAN SOCIAL STRUCTURE. (3 credits).

166-222A URBAN SOCIOLOGY. (3 credits).

166-223B SOCIAL STRATIFICATION. (3 credits; *Prerequisite:* Introduction to Sociology).

166-225B MEDICINE AND HEALTH IN MODERN SOCIETY. (3 credits).

166-230B CLASS, ETHNICITY, AND POLITICS IN CANADA AND IN QUEBEC. (3 credits).

166-317B RESEARCH IN CANADIAN MASS COMMUNICATIONS. (3 credits).

166-435B SOCIOLOGY OF POPULAR CULTURE. (3 credits; Prerequisites: Sociology 217A or consent of instructor).

CENTRE FOR EAST ASIAN STUDIES

Director — P.T.K. LIN
Associate Director — S.J. NOUMOFF

The Interdisciplinary Committee on East Asian Studies consists of faculty members in all relevant departments.

3434 McTavish Street; Tel: 392-4280.

GENERAL INFORMATION

The Centre for East Asian Studies offers an interdisciplinary program focusing on China and Japan. The courses included in the East Asian Studies program are given in the departments of Anthropology, East Asian Languages and Literatures, Economics, Geography, History, Music, Political Science, Religious Studies and Sociology. These courses are listed below.

The program has been structured to accommodate general students who wish to acquire a basic knowledge of East Asia as well as those students who desire to specialize in the field. Requirements for the Major Program and the Honours Program currently offered are as follows:

MAJOR IN EAST ASIAN STUDIES (In conjunction with the Department of History)

The requirements for a Major in East Asian Studies consist of the following: One compulsory course (History 208D) plus forty-eight credits (or the equivalent) drawn from the course listings in East Asian Studies and the Department of East Asian Languages and Literatures. These forty-eight credits must be spread among more than one department. Students are encouraged to enrol in the language sequence.

Enrolment in the East Asian Studies Major program will take place at the Centre for East Asian Studies just prior to university registration. The date for enrolment will be announced by September.

Inquiries regarding the Major in East Asian Studies should be addressed to Prof. S.J. Noumoff, Centre for East Asian Studies, 392-4288.

HONOURS IN EAST ASIAN STUDIES (In conjunction with the Department of History)

The Honours Program in East Asian Studies will consist of a total of 60 credits. Of these 60 credits, the following 30 credits are compulsory: History 208D, 6 credits; a minimum of three levels of Chinese or Japanese language study, 18 credits; History 417D, 6 credits. In addition to these required courses, students must complete 30 additional credits selected from the East Asian Studies course listing. Modifications may be considered by the Honours adviser.

Since this is a multidisciplinary program, students will be encouraged to elect courses in more than one discipline.

Enrolment in the East Asian Studies Honours Program will take place just prior to university registration. The date and place of this enrolment will be announced in early September.

Inquiries regarding the Honours Program in East Asian Studies should be addressed to Professor P. Lin, Centre for East Asian Studies, 392-4582.

COURSE DESCRIPTIONS

151-313B SOCIAL INSTITUTIONS OF THE EARLY CIVILIZATIONS. (3 credits. See entry under Anthropology Dept). *Not given in 1976-77.*
Professor Trigger

151-331B PRE-HISTORY OF EAST ASIA. (3 credits. See entry under Anthropology).
Professor Ikawa-Smith

117-201D INTRODUCTION TO CHINESE LITERATURE. (6 credits. See entry under East Asian Languages and Literatures). *Not given 1976-77.*

117-210D FIRST LEVEL CHINESE. (6 credits. See entry under East Asian Languages and Literatures).
Mrs. Wang

117-211D INTRODUCTION TO CONVERSATIONAL CHINESE. (6 credits. See entry under East Asian Languages and literatures).
Ms. Chang

117-220D SECOND LEVEL CHINESE. (6 credits. See entry under East Asian Languages and Literatures).
Mrs. Wang

117-310D THIRD LEVEL CHINESE. (6 credits. See entry under East Asian Languages and Literatures).
Ms. Chang

117-410D FOURTH LEVEL CHINESE. (6 credits. See entry under East Asian Languages and Literatures).
Ms. Chang

117-215D FIRST LEVEL JAPANESE. (6 credits. See entry under East Asian Languages and Literatures).
Professor Geddes

117-216D SECOND LEVEL JAPANESE. (6 credits. See entry under East Asian Languages and Literatures).
Professor Geddes

117-315D THIRD LEVEL JAPANESE. (6 credits. See entry under East Asian Languages and Literatures).

117-205D HISTORY OF JAPANESE LITERATURE. (6 credits. See entry under East Asian Languages and Literatures. Offered in alternate years.)
Professor Geddes

117-305D CONTEMPORARY JAPANESE LITERATURE. (6 credits. See entry under East Asian Languages and Literatures). *Not offered in 1976-77.*

117-306D THE JAPANESE NOVEL IN ENGLISH TRANSLATION. (6 credits. See entry under East Asian Languages and Literatures). *Given in alternate years. Not given in 1976-77.*
Professor Geddes

117-405D ADVANCED TOPICS IN JAPANESE LITERATURE. (6 credits. See entry under East Asian Languages and Literatures). *Not offered in 1976-77.*

154-315B ECONOMIC DEVELOPMENT OF CHINA. (3 credits. See entry under Economics).
Professor Wright

154-341A THE ECONOMIC HISTORY OF CHINA AND JAPAN, MAINLY FROM 1840-1949. (3 credits. See entry under Economics). *Not given 1976-77.*
Professor Loutfi

154-421D COMPARATIVE ECONOMIC SYSTEMS. (6 credits. See entry under Economics).
Professor Fenichel

101-208D THE DEVELOPMENT OF EAST ASIAN CIVILIZATION. (6 credits. See entry under History).
Professor Lin

101-308D HISTORY OF CHINA. (6 credits. See entry under History).
Professor Laffey

101-318D A HISTORY OF JAPAN. (6 credits. See entry under History).
Professor Ota

101-368D TRANSFORMATION AND DEVELOPMENT IN THE PEOPLE'S REPUBLIC OF CHINA. (6 credits. See entry under History).
Professor Lin

101-418D PROBLEMS IN MODERNIZATION OF JAPAN. (6 credits. See entry under History).
Professor Ota

101-420D FORMS OF PROTEST IN TRADITIONAL CHINA. (6 credits. See entry under History). *Not given in 1976-77.*
Professor Laffey

101-428D CONTINUITY AND CHANGE IN TWENTIETH CENTURY CHINA. (6 credits. See entry under History). *Not offered in 1976-77.*
Professor Lin

101-458D PROBLEMS IN TRADITIONAL CHINESE HISTORY. (6 credits. See entry under History).
Professor Laffey

101-417D TRADITION AND CHANGE IN CHINA. (6 credits. See entry under History).
Professor Lin

160-227B POLITICAL CHANGE IN THE THIRD WORLD: INDEPENDENCE AND NATION BUILDING. (3 credits. See entry under Political Science).
Professor Bruneau

160-231D POLITICAL THEORY. (6 credits. See entry under Political Science).
Professors Taylor, Shingler, Noumoff and Sarf

160-323B POLITICS AND GOVERNMENT IN EAST ASIA. (3 credits. See entry under Political Science).
Professor Noumoff

160-332D NON-WESTERN POLITICAL PHILOSOPHY. (3 credits. See entry under Political Science).
Professor Noumoff

160-349B CONTEMPORARY INTERNATIONAL SYSTEMS AND FOREIGN POLICY: ASIA. (3 credits. See entry under Political Science).
Professor Nayar

183-312A THE GEOGRAPHY OF CHINA. (3 credits. See entry under Geography).
Professor Veilleux

214-323A MUSIC CULTURES OF ASIA. (3 credits. See entry under Faculty of Music).
Professor Song Bang-Song

214-329D MUSIC CULTURES OF EAST ASIA. (6 credits. See entry under Faculty of Music).
Professor Song Bang-Song

260-252A HISTORY OF RELIGION. (3 credits. See entry Religious Studies).
Staff

166-220B COMPARATIVE SOCIOLOGY. (3 credits. See entry under Sociology).

166-332D SOCIAL ASPECTS OF DEVELOPMENTS IN THE THIRD WORLD. (6 credits. See entry under Sociology).
Professor von Eschen

166-411A STATE AND ECONOMY IN INDUSTRIAL SOCIETIES. (6 credits. See entry under Sociology).
Professor Ehrensaft

117-492D TUTORIAL. (6 credits). Advanced reading course in language or literature.

CENTRE D'ETUDES CANADIENNES — FRANCAISES (157)

Associate Professors — MAX DORSINVILLE *(Director);* JEAN-LOUIS ROY; DANIEL LATOUCHE
Lecturer — YVAN LAMONDE
Sessional Lecturers — LAURIER L. LaPIERRE; GARY CALDWELL; EDOUARD CLOUTIER; PIERRE LAMONDE; ANDRÉ BERNARD
Assistant to the Director — LAURE BELLEAU
Advisory Committee — MICHAEL STEIN, *Chairman (Political Science);* T.C. BRUNEAU *(Political Science);* M. CARTWRIGHT *(French);* P. DAVENPORT *(Economics);* C. MILLER *(History);* M. PINARD *(Sociology);* R. VIGNAULT *(French);* E. WADDELL *(Geography);* B. YOUNG *(History)*

A student who wishes to Major in the French Canada Studies Program will establish, in consultation with an adviser who will become his tutor for the entire program, a detailed sequence of courses and seminars. Students will select a minimum of 54 credits in courses dealing with Quebec and/or Canada. Of the 54 credits, 30 must be distributed in courses in History, Political Science, Quebec Literature, Sociology and Economics available at the Centre or in the appropriate departments, with a minimum of 6 credits in each discipline. In addition, the student in his/her final year is required to do the research tutorial, 157-472D (6 cr.). The remaining 18 credits can be freely distributed within the above sequence with the approval of the adviser. This inter-disciplinary program is being offered in conjunction with various departments, to give undergraduate students an opportunity to have a comprehensive understanding of the Quebec society in its Canadian and North American context.

To inquire about the program, students should contact Professor Max Dorsinville (392-5200) at 3475 Peel Street.

COURSES OFFERED BY THE FRENCH CANADA STUDIES PROGRAM

157-200A INTRODUCTION TO QUEBEC SOCIETY. (3 credits). This special survey course will discuss the major historical developments in the economic, social, intellectual and political life of Quebec society in the XXth century, with special attention to the post 1945 period. It is designed to familiarize students with some of the fundamental issues in contemporary Quebec. Topics covered include English-French relations, the impact of industrialization, labour legislation, the role of the Church and the State, the rise and content of the separatist ideology, the evolution of revolutionary ideas, violence, the role of the media and the study of mass culture. A reading knowledge of French is suggested. (Not open to students who have taken 157-210B).
Professeur LaPierre

157-220B INTRODUCTION A L'HISTOIRE DE LA SOCIETE QUEBECOISE. (3 crédits). Les objectifs de ce cours d'introduction sont doubles: familiariser les étudiants avec les instruments de recherche et l'historiographie québécoise, évoquer les grandes étapes du développement économique, social et politique de la société québécoise depuis la Confédération jusqu'à la Révolution tranquille.
Professeur Roy

157-226A INTRODUCTION A LA VIE POLITIQUE QUEBECOISE. (3 crédits). Une introduction à la vie politique québécoise à travers l'étude des institutions, des idéologies et des comportements politiques. Une attention particulière sera accordée à la structure et aux changements dans le système politique québécois.
Professeur Bernard

157-300A HISTOIRE CULTURELLE DU QUEBEC I. (3 crédits). Introduction générale. La culture pré-industrielle du Québec (1775-1840): civilisation traditionnelle (tradition orale, contes, culture matérielle. . .) et culture livresque (l'imprimé, la presse, la poste, les bibliothèques. . .) Culture et groupes sociaux: l'idéologie libérale et les Révolutions américaine, française et bas-canadienne (1837-1838). (Les étudiants qui ont déjà suivi 157-300D ne peuvent s'inscrire à ce cours.)
Professeur Yvan Lamonde

157-301A HISTOIRE DE L'EDUCATION AU QUEBEC. (3 crédits). Ce cours, donné en collaboration avec la Faculté des Sciences de l'Education, traite de l'histoire de l'éducation au Québec depuis la Confédération, y compris une brève étude de l'éducation à l'époque de la Nouvelle-France, et avant la Confédération. *Ce cours ne sera pas donné en 1976-77.*

157-303A HISTOIRE SOCIALE DU QUEBEC 1867-1921. (3 crédits). Un demi-siècle de changements sociaux et économiques transforme la société québécoise en une société industrielle et urbaine. Les groupes d'intérêts, syndicats, mouvements coopératifs, associations scientifiques, corporations professionnelles, etc. sont forcés de se définir. La contestation politique et sociale génère des conflits nombreux. Les pouvoirs, Eglise, Etat, milieux d'affaires ajustent et consolident leur emprise sur une société en profonde mutation. Quelles sont les causes externes et internes de ces changements et quelles en furent les effets matériels et culturels?
Professeur Roy

157-304B CULTURE ECONOMIQUE ET CULTURE POLITIQUE AU QUEBEC ET AU CANADA. (3 crédits). Les canadiens-français ont-ils une attitude particulière face à l'activité économique? Comparaison avec les Etats-Unis et le Canada anglais, la notion de compétition, le paradigme de Pareto dans les comportements économiques et politiques au Canada français. L'importance du co-opératisme. Relations entre les conceptions de l'activité politique et de l'activité économique chez les deux communautés canadiennes. Relations entre progrès technologiques et développement économique. Impact des politiques fédérales et intervention du gouvernement québécois dans le developpement économique 1867-1975.
Professeur Pierre Lamonde

157-310B HISTOIRE CULTURELLE DU QUEBEC II. (3 crédits). Introduction générale. La culture industrielle du Québec (1840-1900): démographie, urbanisation, révolutions des transports, de la technologie et des communications (télégraphe, téléphone). La culture bourgeoise et les biens de consommation (marchés, importation, le catalogue.) La culture urbaine ouvrière (temps de travail, temps de loisir). L'apparition de la culture populaire de divertissement (cirque, théâtre, parc, exposition, sport, vaudeville). (Les étudiants qui ont déjà suivi 157-300D ne peuvent s'inscrire à ce cours.)
Professeur Yvan Lamonde

157-313B HISTOIRE SOCIALE DU QUEBEC 1921-1960. (3 crédits). Urbaine et industrielle, la société québécoise fait face à d'innombrables problèmes économiques et sociaux aggravés par la crise économique et la guerre. Les élites cléricales et politiques refusent de consentir les transformations devenues indispensables. Les élites intellectuelles et nationalistes sont divisées quant à l'orientation à donner à la société québécoise. Lentement, dans les groupes sociaux et économiques, à l'Université, au sein de la fonction publique, dans les media, à l'intérieur de l'Eglise, des projets et des volontés de changement sont exprimés voire même expérimentés. Deux discours culturels s'affrontent, garder l'héritage/moderniser la société. Le demi-siècle étudié dans ce cours trouve son sens dans cet affrontement.
Professeur Roy

157-316A QUEBEC ET L'AMERIQUE DU NORD. (3 crédits). Ce cours tentera de répondre à la question suivante: dans quelle mesure et de quelle façon le Québec est-il, malgré sa spécificité culturelle, une communauté nord-americaine? Les principaux thèmes étudiés seront les suivants: les "freaks", la contestation, la violence, la drogue, la jeunesse. *Ce cours ne sera pas donné en 1976-77.*
Professeur Latouche

157-336B QUEBEC ET LE CANADA. (3 crédits). Comment les Canadiens anglais et les Québécois francophones se perçoivent-ils mutuellement? Existe-t-il des stéréotypes et des images communes? Quelles sont les principales différences culturelles entre les deux groupes? Comment la Révolution tranquille a-t-elle été perçue au Canada? Quelles sont les perspectives d'avenir envisagées par les deux groupes?
Professeur Cloutier

157-360B QUEBEC AND THE THIRD WORLD. (3 credits). A study of the intellectual and literary relations between Quebec and the Third World during the period 1945-1975. The linkage provided by the relevant works of Fanon, Trudeau, Césaire, Vallières and others will be analyzed in its socio-historical context and as a "key" toward an understanding of some major works of fiction and poetry geared to social change published in the Sixties in Quebec. (A reading knowledge of French is suggested).
Professor Dorsinville

157-366A THE MINORITIES IN QUEBEC I. (3 credits). This course will focus on the history and the distribution of minority groups in Quebec. Topics for analysis include: historical background; ethnic distribution; socio-economic composition; political involvement; process of adaptation (assimilation, isolation or coexistence).
Professor Caldwell

157-367B THE MINORITIES IN QUEBEC II. (3 credits). After a brief historical survey, this course will focus on the general relationship between the various minority groups and the larger francophone community. Topics for analysis include language rights; schooling system; social conflict; analysis of bi-lateral perceptions.
Professor Caldwell

157-370A QUEBEC 1960-1970: LA REVOLUTION TRANQUILLE. (3 crédits). Y a-t-il eu une Révolution Tranquille au Québec? Ses origines, ses causes, ses instigateurs. Quelles en ont été les principales composantes politiques, économiques, sociales et culturelles? L'évolution des mentalités et des structures au Québec durant cette période. Peut-on mesurer ces changements? Les tendances, les acteurs de cette période? La "fin" de la Révolution Tranquille? Jugement sur la Révolution Tranquille: les choses ont-elles vraiment changé au Québec depuis cette date? This course will be given mostly in French; essays can nevertheless be written in English although reading knowledge of French is required. Anglophone students are encouraged to register.
Professeur Latouche

157-371D LIVRES ET SOCIETE QUEBECOISE. (6 crédits). Travaux pratiques: problèmes actuels de la société canadienne-française. Ce séminaire de recherche est consacré à l'analyse des divers phénomènes socio-culturels et idéologiques qui se rapportent à l'Histoire de l'édition, de l'importation et de la distribution du livre au Québec et au Canada

entre 1820 et 1960. L'analyse sectorielle et quantitative sera privilégiée. Travaux pratiques orientés vers la constitution d'un dossier cumulatif. *Ce cours ne sera pas donné en 1976-77.* (Les étudiants qui ont déjà suivi 157-370D ne peuvent s'inscrire à ce cours.)

157-390B SOCIETE QUEBECOISE ET PRODUCTION CULTURELLE. (3 crédits). Evolution parallèle de la société et des formes culturelles. Conditions et thématique de la production québécoise dans la peinture, dans la photographie, dans la caricature et dans la bande dessinée. (19e et 20e siècles). Enseignement par équipes avec le personnel de musées et d'archives. Projections et analyse de documents. (Ce cours ne sera pas donné en 1976-77).

157-406B CULTURE ET CONTRE-CULTURE POLITIQUE AU QUEBEC ET AU CANADA. (3 crédits). Les origines et l'évolution récente de la culture traditionelle au Québec. L'apparition de la contre-culture, ses protagonistes, son contenu. La contre-culture a-t-elle été récupérée par le système? La libération individuelle face à la libération collective.
Professeur Latouche

157-407B LITTERATURE FRANCOPHONE COMPAREE: QUEBEC, ANTILLES, AFRIQUE. (3 crédits). Historique et analyse socio-culturelle des principaux mouvements littéraires; étude intensive d'oeuvres capitales dans les genres poétique, romanesque et théâtral; définition de l'unité de ces littératures dans une esthétique post-européenne. (Ce cours ne sera pas donné en 1976-77).

157-411B QUEBEC ET CANADIENS — FRANÇAIS. Séminaire de recherche. (3 crédits; *Prérequis:* Hist. 202D, 302D, 313D ou FCSP 220B ou autorisation du professeur). Etude historique de l'évolution des communautés francophones au Canada, à l'extérieur du Québec et des relations entre ces communautés francophones et la société québécoise. (Ce cours ne sera pas donné en 1976-77).

157-426B ATTITUDES POLITIQUES, PARTIS ET COMPORTEMENTS POLITIQUES DANS LE QUEBEC CONTEMPORAIN. (3 crédits). Ce cours cherchera à identifier les principaux courants politiques que l'on retrouve aujourd'hui au Québec: indépendantisme, fédéralisme, socialisme. Le rôle politique des syndicats et des mouvements de contestation sera par ailleurs étudié de façon particulière.
Professeur Latouche

157-436A LES INTELLECTUELS ET LA SOCIETE QUEBECOISE. (3 crédits). Existe-t-il une classe intellectuelle au Québec? Son évolution historique, son rôle dans l'évolution politique du Québec. Ses liens avec les intellectuels canadiens, américains et européens; le rôle de la communauté scientifique au Québec. Le développement des institutions intellectuelles, de leurs moyens d'action et leur impact. Une attention particulière sera portée à (1) la période de l'après-guerre, surtout celle de la Révolution Tranquille (2) aux mouvements tels Cité Libre, Parti Pris, Mouvement Laique (3) à l'action catholique de ces mouvements. (Ce cours ne sera pas donné en 1976-77).

157-470D CULTURE DE MASSE ET MEDIA DE COMMUNICATION AU QUEBEC. (6 crédits). La culture populaire rurale et urbaine (1900-1970) au Québec. Production de masse, consommation de masse, culture de masse: l'automobile comme phénomène à explorer. La consommation de biens et de loisirs: les spectacles traditionnels (vaudeville, théâtre. . .), les media nouveaux (cinéma, radio-télévision), l'évolution du loisir (parcs, terrains de jeux, salles de billard. . .), les changements des formes culturelles et sociales. Interviews, exposés d'information, recherche.
Professeurs Languirand et Yvan Lamonde

157-472D TUTORIAL. (6 crédits). Sous la direction du Directeur du Centre d'Etudes canadiennes-françaises ou d'un professeur, chaque étudiant en concentration canadienne-française devra choisir un sujet auquel il travaillera pendant une année. Sa recherche terminée, l'étudiant rédigera un essai qu'il présentera à ses collègues et à un panel de spécialistes, qui en discuteront.
Le Directeur

COURSES OFFERED JOINTLY BY THE FRENCH CANADA STUDIES PROGRAM AND DEPARTMENTS

154-211D INTRODUCTION TO CANADIAN ECONOMIC HISTORY. (6 credits). A survey of the economic basis of Canadian history from the French Regime to the twentieth century, with a view to examining the historical roots of contemporary problems of the Canadian economy and society. The structure, role and evolution of economic institutions are stressed.
Professor Naylor

166-230B CLASS, ETHNICITY, AND POLITICS IN CANADA AND IN QUEBEC. (3 credits). Class and Ethnicity in Quebec and Canada. The segmented nature of the social structure. Types of party systems. Class and ethnic factors in federal politics. Various manifestations of class and ethnic politics in Quebec since the thirties: Elite versus mass behaviour. The Quiet Revolution, Separatism and Quebec politics since the sixties.
Professor Pinard

154-321D THE QUEBEC ECONOMY. (6 credits). A study of the economic development of Quebec and contemporary economic problems in the province. Topics include: agriculture and economic development (1780-1850); the industrial revolution in Quebec (1850-1930); the Great Depression; the economics of the Quiet Revolution; unions and labour relations; poverty and

welfare programs; health; unemployment and regional economic expansion; industrial structure and foreign ownership; the economics of Quebec nationalism.
Professor Davenport

125-328D HISTOIRE DE LA CIVILISATION FRANÇAISE. (126-264D) (6 crédits). Cours offert conjointement par le Centre d'Etudes canadiennes-françaises et le Département de langue et de littérature françaises. Etude des différents secteurs de la société québécoise (économique, politique, social, culturel). Analyse sociologique d'oeuvres littéraires et artistiques. Recommandé aux étudiants du département qui choisissent l'option "littérature québécoise". Les étudiants de l'extérieur ne sont admis que sur autorisation du professeur.

183-325A PHYSICAL GEOGRAPHY OF QUEBEC. (3 credits). An account of the development of the present natural environment of Quebec with particular attention to changes following the retreat of the Laurentide Ice Sheet. Discussion of contemporary processes, resources and problems will provide a background for Geography 326B.
Professor Carson

183-326B HUMAN GEOGRAPHY OF QUEBEC. (3 credits). A geographic interpretation of selected social, economic and political problems of contemporary Quebec: ethnicity, demography, organization, regional disparities, economic marginality, with the purpose of segregating elements unique to Quebec from more universal aspects that pervade them.
Professor Waddell

101-403D THE COMING OF THE QUIET REVOLUTION. (6 credits; prerequisite: any course in Canadian or Quebec History). While this course will deal principally with the formation and development of social and economic groups in Quebec since the twenties, it will also attempt to study the political development in Quebec, its relation with the Canadian Federation and the impact it had upon the modernization of Quebec Society in the last fifteen years. A knowledge of French is required.
Professor Roy

160-417B THE MILITARY AND POLITICS. (3 credits; *Prerequisite:* 160-211D or consent of instructor). Identification and comparison of the political and socio-economical roles played by professional military establishments in both the relatively modernized and the relatively non-modernized societies. The course will focus on the dynamics and impact of the military industrial complex in the United States and Canada and on the significance of military coups and the performance of military regimes for the process of political modernization. The contribution of Janowitz, Huntington, Pye, Johnson, Lee, Bienen and Hurewitz will be considered. *Not given in 1976-77.*

125-520D EVOLUTION DE LA LANGUE FRANÇAISE AU CANADA. (126-442D) (6 crédits; Préalable: 125-235D ou permission du professeur). Cours donné conjointement par le Département de langue et de littérature françaises et le Centre d'Etudes canadiennes françaises. Le franco-canadien (ou franco-québécois) à partir de 1760. Etude des rapports de la société et l'évolution de la langue. Le cours est conçu pour donner aux étudiants l'occasion d'effectuer des recherches personnelles.

Ce cours est organisé en séminaire de recherches. Après une période d'initiation, l'étudiant fera un travail personnel portant sur un aspect particulier et précis, par exemple: la prononciation à la fin du XVIIIe siècle, le vocabulaire parlementaire en 1792, les anglicismes dans la Gazette de Québec en 1965-1770.
Professeur Rabotin

COURSES GIVEN BY DEPARTMENTS

Anthropology

151-226D INDIGENOUS PEOPLES OF NORTH AMERICA. *(Prerequisite:* 183-236A required to obtain credits for either).

151-436A SEMINAR ON NORTH AMERICAN PEOPLE.

Architecture

301-372B HISTORY OF ARCHITECTURE IN CANADA. *(Prerequisite:* 301-102B).

Economics

154-200D ECONOMIC ANALYSIS AND APPLICATIONS.

154-211D AN INTRODUCTION TO ECONOMIC HISTORY.

154-304D CANADIAN ECONOMIC POLICY.

154-306D LABOUR ECONOMICS AND INSTITUTIONS.

154-312D POLITICAL ECONOMY OF DEPENDENCE IN THE WESTERN HEMISPHERE.

154-404D TRANSPORTATION.

154-426D LABOUR ECONOMICS.

154-431A SEMINAR IN CANADIAN ECONOMIC HISTORY.

154-431A SEMINAR IN CANADIAN ECONOMIC HISTORY

French

125-204A CIVILIZATION QUEBECOISE

125-205B CIVILIZATION QUEBECOISE

125-208A LITTERATURE QUEBECOISE CONTEMPORAINE

125-209B LITTERATURE QUEBECOISE COMTEMPORAINE

125-315A,B LE CINEMA QUEBECOIS.

125-328D HISTOIRE DE LA CIVILISATION QUEBECOISE

125-370A LA LITTERATURE QUEBECOISE JUSQU'EN 1940.

125-371B LA LITTERATURE QUEBECOISE DEPUIS 1940.

125-372D LE ROMAN QUEBECOIS JUSQU'EN 1945.

125-373B LE ROMAN QUEBECOIS (1945-1960)

125-375D LE THEATRE QUEBECOIS

125-377A LA CRITIQUE LITTERAIRE QUEBECOISE

125-378A LE CONTE QUEBECOIS

157-382B LE ROMAN QUEBECOIS DEPUIS 1960.

125-470A POESIE QUEBECOISE

125-471B POESIE QUEBECOISE

125-485A ESSAI QUEBECOIS AVANT 1960.

125-486B ESSAI QUEBECOIS DEPUIS 1960.

Political Science

160-211D INTRODUCTION TO COMPARATIVE GOVERNMENT AND POLITICS.

160-320A CANADIAN POLITICAL PROCESS I.

160-321B CANADIAN POLITICAL PROCESS II.

Sociology

166-210A INTRODUCTION TO SOCIOLOGY.

166-214A INTRODUCTION TO SOCIOLOGY: CANADIAN SOCIAL STRUCTURE.

166-222A URBAN SOCIOLOGY.

166-223B SOCIAL STRATIFICATION.

166-230B CLASS ETHNICITY & POLITICS IN CANADA AND IN QUEBEC.

166-324B URBAN SOCIAL ECONOMY.

166-326B POLITICAL SOCIOLOGY.

Geography

183-217B INTRODUCTION TO URBAN GEOGRAPHY.

183-302D ENVIRONMENT: ECOSYSTEMS AND MAN.

183-313A GEOGRAPHY OF RECREATION.

183-333A MONTREAL URBAN FIELD STUDIES.

CLASSICS (114)

Professors — P.F. McCULLAGH *(Hiram Mills Professor of Classical Philology);* A. SCHACHTER
Associate Professors — A. FARMAKIDES; J.M. FOSSEY *(on leave);* M.J. SILVERTHORNE; P. VALERI TOMASZUK: P. VIVANTE; G.M. WOLOCH
Assistant Professor — G.L. SNIDER (Chairman)

Stephen Leacock Building, Room 517, Telephone 392-5227

Classics for the Specialist

The Department's honours programs are designed to train students who wish to pursue careers in Classics, Ancient History and Archaeology, Major programs give rather less intensive training and provide a useful background for students interested in the liberal arts or the social sciences.

Classics for the Non-Classicist

The Department offers numerous courses — many of which do not require a knowledge of Ancient Greek or Latin — designed for students in other programs such as Anthropology, Art History, English, Linguistics, Modern Languages, Philosophy, Political Science, Religious Studies.

Students of Languages, literature and history may in addition be interested in the introductory language courses offered by this Department, which enjoys an international reputation as a pioneer in this field.

The very nature of the subject itself — covering as it does not only the language and literature, but also the history, archaeology, art, religion, philosophy, politics and economics of an entire civilization — can provide the student with a satisfying and relevant background to a wide range of studies.

MAJOR PROGRAMS

NOTE: The following outlines represent *Departmental* requirement only. The attention of students is directed to the regulations of *Faculty* concerning *Programs.* Each student's program must also satisfy the regulations imposed by the Faculty of Arts.

Major in Classics (Classical Culture and Society)

(See Professor G.M. Woloch, L527, 392-5220)

The student will select 27 credits from each of the two groups of courses listed below, choosing a maximum of 12 credits at the 200-level from each group. The course 114-484 is required for all students in this program, and may be taken as part of either the first or second group.

Group 1. "Ancient Culture": e.g. Classics 200A, 202B, 203A/B, 204B, 207A, 208B, 241B, 242A, 300B, 302B, 305D, 307A, 309A, 400B, 405A, 406B, 484B.

Group 2. "Ancient Society": e.g. Classics 201A, 205D, 301D, 303D, 304D, 306B, 308B, 401A, or 409A, 470D, 475A, 476B, 484B.

NOTES:

1. Students who wish to substitute for Non-Language courses a continuation sequence of courses in the original ancient Greek or Latin may do so.
2. Students may on occasion substitute for a course offered in the Department of Classics a course offered by another Department, subject to the approval of the Department of Classics.
3. *This Program does NOT lead to post-graduate work in Classics.*

Major in Classics (Ancient Greek)

(See Professor M.J. Silverthorne, L 528, 392-5222)

24 Credits in Ancient Greek Literature, including Classics 321A and 323D.
30 Credits in related courses chosen with the approval of the Department of Classics.

TOTAL: 54 Credits

Major in Classics (Latin)

(See Professor P.V. Tomaszuk, L524, 393-5219)

24 Credits in Latin Literature, including Classics 311A and 313A.
30 Credits in related courses chosen with the approval of the Department of Classics.

TOTAL: 54 Credits

Major in Classics (Ancient Greek and Latin)

(See the Chairman, L517, 392-5227)

Minimum Course Requirements

12 Credits in Intermediate Ancient Greek Literature, including Classics 114-321A and 323D.
6 Credits in Senior Greek Literature.
12 Credits in Intermediate Latin Literature, including Classics 114-311A, and 313A.
6 Credits in Senior Latin Literature.
18 Credits in Non-Language Courses approved by the Department of Classics.

Major in Classics (Classical History and Archaeology)

(See Professor J.M. Fossey, L529,392-5335)

Minimum Course Requirements

24 Credits in Archaeology Courses offered by the Department of Classics (i.e. Classics 114-205D and 305D and 470D, and 475A, and 476B.
18 Credits in Ancient History (i.e. Classics 114-201A and 241B and 301D and 303D).
6 Credits in Classics in Translation courses given in the Department of Classics.
6 Credits in a course or courses chosen with the approval of the Department of Classics.

NOTE: *This Program does NOT lead to post-graduate work in Classics,* although it could qualify a student for research in various aspects of Roman and European Archaeology.

Major in Classics (Classical and Hellenic Studies)

(See Professor A. Farmakides, L516, 392-5222)

24-30 Credits in Modern Greek Language and Literature.
30 Credits in related courses chosen with the approval of the Department of Classics. (Note: These latter may include up to 12 credits in a second language, ancient or modern.).

TOTAL: 54 Credits

Major in Classics (Ancient and Modern Greek)

(See Professor A. Farmakides, L516, 392-5222)

Minimum Course Requirements

Classics 220D *or* 221A.
Classics 235A/B, 236A/B, 335A/B (which must be taken unless the student can prove proficiency in Modern Greek).
12 Credits in Intermediate Ancient Greek Literature.
6 Credits in Ancient Greek Literature.
18 Credits in Modern Greek Literature.
18 Credits in Non-Language Courses approved by the Department of Classics.

INTERDISCIPLINARY MAJOR PROGRAMS

The Department of Classics participates in the following Interdisciplinary Major Programs.

Classics and Linguistics

1. *Classics (27 credits)*

The students will select a continuation sequence in either Ancient Greek or Latin. Six credits must be taken in the language not selected.

2. *Linguistics (27 credits)*

104-200A,B/104-201A,B INTRODUCTION TO THE STUDY OF LANGUAGE.

104-400A THEORY AND METHODS OF HISTORICAL LINGUISTICS.

104-401B SEMINAR IN HISTORICAL LINGUISTICS.

PLUS 15 Credits in other Linguistic Courses selected with due regard to prerequisites.

Humanistic Studies

The language component may include Latin, Ancient Greek, or Modern Greek.

Modern Languages

One of the modern languages may be Modern Greek.

HONOURS PROGRAMS

Honours in Classics

(See the Chairman, L517, 392-5227)

Minimum Course Requirements

24 Credits in Ancient Greek Literature, including Classics 114-321A and 323D
24 Credits in Latin Literature, including Classics 114-311A and 313A.
24 Credits in Ancient Greek and Latin Language Courses at the 200 level, plus Non-Language Courses.
COMPREHENSIVE Honours Tutorial.

NOTES:

1 The Non-Language Courses may be chosen from among courses given within the Department, or courses offered by other Departments, chosen with the permission of the Department of Classics.

2 **Comprehensive Honours Tutorial.** Every Honours student will be assigned to a Tutor upon entry into the Honours Program. The Tutor will meet with the student regularly during Term, and will assign essays or other work on subjects related to the course work on which the student is engaged. The Tutor may also, where practicable, assign summer reading. It will also be the Tutor's function to assist the student in selecting a suitable sequence of courses. Satisfactory completion of the work involved will be a requirement for the Honours degree, and successful candidates will be provided with a testimonial letter stating that they have fulfilled this requirement.

Honours in Classics (Classical History and Archaeology)

(See Professor J.M. Fossey, L 529, 392-5335)

24 Credits in Ancient Greek or Latin
12 — 18 Credits in the language not chosen above.
36 — 42 Credits in Archaeology and Ancient History courses offered by the Department of Classics
6 — 18 Credits in other courses. Comprehensive Honours Tutorial

TOTAL: 90 Credits

NOTES:

1. For the Comprehensive Honours Tutorial, please see "Honours in Classics", Note 2.
2. Students proposing to obtain an M.A. in Classics at McGill are advised to gain 18 credits in the second Classical language, and to consult the Department for the precise requirements for the M.A. in Classics.
3. Classics 114-200A and 202B may NOT be included in the student's required courses for this program.

Honours in Classics (Classical and Hellenic Studies)

(See Professor A. Farmakides, L 516, 392-5222)

Minimum Course Requirements

Classics 114-220D or 221A.
Classics 114-235A/B, 236A/B, 335A/B.
Classics 114-214B or 213A/B.
18 Credits in Ancient Greek Literature.
18 Credits in Modern Greek Literature.
18 Credits in Latin Literature.
18 Credits in Non-Language Courses.

NOTES:

1. Classics 235A/B, 236A/B, 335A/B must be taken unless the candidate has reached a standard sufficient to satisfy the Department that he/she is proficient in Modern Greek.
2. The Non-Language Courses may be chosen from among courses given within the Department, or courses offered by other Departments, chosen with the permission of the Department of Classics.

JOINT HONOURS PROGRAMS

All Joint Honours Programs must have the approval of both Departments concerned. For Classics, see the Chairman, L517, 392-5227.

Formal arrangements exist for the following programs:

Joint Honours in Classics and History

(See Professor G.M. Woloch, L527, 392-5220)

1. Students must complete 36 credits in each Department for a total of 72 credits. The remaining 18 credits of electives may be chosen from among the offerings of other Departments at McGill but these electives should be chosen in consultation with the Honours advisers in the Departments of History and Classics.
2. Students will have the option of 6 credits in history courses offered by the Classics Department as part of the History requirement.

Joint Honours in Anthropology and Classical Archaeology

(See Professor J.M. Fossey, L 529, 392-5335)

The Departments of Anthropology and Classics offer the following program leading to a Joint Honours B.A. degree:

1. Students must complete 33 credits in Anthropology and 39 credits in Classics, for a total of 72 credits. The remaining 18 credits may be chosen from among offerings of other Departments at McGill, but these electives should be chosen after consultation with advisers in the Anthropology and Classics Departments.

This program does NOT lead to post-graduate work in pure Classics, but it may qualify the student for post-graduate work in Archaeology and Prehistory.

2. *Anthropology Requirements:*

9 Credits consisting of 3 of the following five "core courses": Anthropology 151-354A, 355B, 356B, 357A, Linguistics 104-230A.
3 Credits Anthropology 151-358B.
6 Credits consisting of 2 advanced level courses (i.e. with a 400 listing).
12 Credits consisting of any other 4 Anthropology courses.
3 Credits consisting of an independent research course (462A or 463B) in the U3 year. The project will be based upon the student's inter-disciplinary training in Anthropology and Classical Archaeology. The project will last for the entire year, with registration for one half course in Anthropology and one half course in Classics.

TOTAL: 33 credits.

3. *Classics Requirements:*

18 — 24 Credits in Archaeology courses.
6 — 12 Credits in Ancient Greek OR Latin.
6 Credits in Ancient History
3 Credits Classics 114-482B (Independent Research).

TOTAL: 39 credits.

NOTE: Classics 114-200A and 202B may NOT be included in the student's required Classics courses for this program.

COURSE DESCRIPTIONS

Non-Language Courses

114-200A GREEK CIVILIZATION (FROM ITS BEGINNINGS TO THE PERSIAN WARS). (3 credits). A survey of Greek civilization (through lectures and self-study modules) from its beginnings in the Bronze Age down through the Persian Wars, including art and architecture, literature (Homer and Hesiod), philosophy and religion, archaeology and history (Herodotus). Classics 114-200A and 114-202B, which completes the survey, are companion courses, but students may elect either course, or both. Original sources will be read in translation. (Not open to students who have taken 114-200D).
Professors Snider and Woloch

114-201A ANCIENT GREEK HISTORY. (3 credits). A survey of Ancient Greek History from the origins to the Roman Conquest. The Roman continuation of this course is 114-241B. (Not open to students who have completed 114-201D in previous years).
Staff

114-202B GREEK CIVILIZATION (FIFTH CENTURY B.C. AND LATER). (3 credits). A survey of Greek civilization of the fifth century B.C., including art and architecture, drama, philosophy and religion, archaeology and history (Thucydides). The continuation of Greek civilization (Hellenistic and Byzantine) will be studied in modular form. Classics 114-200A and 114-202B, which completes the survey, are companion courses, but students may elect either one course, or both. Original sources will be read in translation. (Not open to students who have taken 114-200D).
Professors Snider and Woloch

114-203A/B INTRODUCTION TO GREEK MYTHOLOGY. (3 credits). A survey of the myths and legends of Ancient Greece.
Professor Snider

114-204B. INTRODUCTION TO ANCIENT GREEK RELIGION. (3 credits). A study of the religious practices of the Ancient Greeks.
Professor Schachter

114-205D INTRODUCTION TO CLASSICAL ARCHAEOLOGY: METHODS AND TECHNIQUES. (6 credits). Concerned essentially with the application of modern techniques to Classical Archaeology, and its connections with contemporary Europe.
Staff

114-208B ROMAN LITERATURE AND SOCIETY. (3 credits). Life and Society in the Roman Empire as reflected in contemporary authors of varying genres (epic, history, philosophy, satire and the novel.)
Staff

114-241B ANCIENT HISTORY (ROMAN). (3 credits). A survey of Roman history. (Not open to students who have completed 114-201D).
Staff

114-300B GREEK DRAMA AND THE THEATRE. (3 credits). A study of the Greek dramatists, both tragic and comic, in the light of their plays, with special emphasis on the theatrical techniques of the authors and the means of production in the Greek theatre.
Professor Snider

114-301D SEMINAR IN ANCIENT GREEK HISTORY. (6 credits). A seminar on problems in Ancient Greek History (social, political, and economic) from the beginnings to the time of Alexander.
Professor Woloch

114-304A GREEK POLITICAL IDEAS. (3 credits). The relations of politics, law and moral values in Greek political writings. Readings in translation from the dramatists and historians, Plato and Aristotle, and the fragments of the pre-Socratics, Epicurus and the early Stoics.
Professor Silverthorne

114-307A INTRODUCTION TO ROMAN COMEDY. (3 credits). An analysis of selected plays of Plautus and Terence based on the theories of Bergson and Freud; their influence on later comedy.
Professor Tomaszuk

114-308B THE BARBARIAN KINGDOMS AND THE LATER ROMAN EMPIRE. (3 credits). An historical survey of the Romanized barbarians, the Vandals, Goths and Franks, and their political links to the Roman Empire down to A.D. 568. Sources (Cassiodorus, Gregory of Tours) will be read in translation.
Professor Woloch

Language Courses

114-211A LATIN LANGUAGE LEVEL ONE: INTRODUCTORY LATIN. (3 credits). A course for beginners. (The normal continuation of this course is 114-212B).
Professor McCullagh

114-212B LATIN LANGUAGE LEVEL TWO. (3 credits; *Prerequisite:* Latin Language Level One or its equivalent). Review and reading for students who have had some Latin but who have not recently completed a High School Latin program, or for those who have successfully completed Latin Language Level One (114-211A).
Professor McCullagh

NOTE: *Students entering 200 level Latin courses (except 114-211A) will be required to sit a placement test during the first week of term to allow staff to determine their degree of prior preparation.*

114-213A LATIN LANGUAGE LEVEL THREE. (3 credits; *Prerequisite:* Latin Language Level Two or its equivalent). Reading and Advanced Grammar.
Staff

114-220D INTRODUCTORY ANCIENT GREEK. (9 credits). For students who have not matriculated ancient Greek. NOTE: This class meets four times per week.
Professor Schachter

114-235A MODERN GREEK GRAMMAR 1: READING AND WRITING: ELEMENTARY TO INTERMEDIATE. (3 credits; *Co-requisite:* 114-236A/B or permission of the instructor). A course for all beginners in Modern Greek.
Professor Farmakides

114-237B MODERN GREEK GRAMMAR 2. (3 credits; *Prerequisite:* 114-235A/B and 236A/B or permission of the instructor: *Co-requisite:* 114-238A/B or permission of the instructor). Intermediate grammar, etymology and translation. An introduction to the synchronic study of the language. (Not open to students who have taken 114-335A).
Professor Farmakides

114-337B MODERN GREEK GRAMMAR 3. (3 credits; *Prerequisite:* 114-237A/B or permission of the instructor). Grammar of Purist Modern Greek — a synchronic study, readings, translations.
Professor Farmakides

Literature Courses: Latin

114-214B INTERMEDIATE LATIN LITERATURE. (3 credits; *Prerequisite:* 114-213A or its equivalent). Readings in Latin Prose and Poetry. Not open to those who have taken 114-214D (210D) in previous years.
Staff

114-311A INTERMEDIATE LATIN: POETRY. (3 credits; *Prerequisite:* as for 114-310B). Readings in Vergil: *Aeneid.*
Professor Tomaszuk

114-310B INTERMEDIATE LATIN LITERATURE: MEDIEVAL LATIN II. (3 credits; *Prerequisite:* Classics 114-214B or permission of the Department). A rapid reading course.
Professor McCullagh

114-313A INTERMEDIATE LATIN: PROSE. (3 credits; *Prerequisite;* as for 114-310B). Cicero: selections.
Professor Silverthorne

114-314B INTERMEDIATE LATIN: PROSE. (3 credits; *Prerequisite:* as for 114-310B). Selections of graded difficulty from various prose authors.
Professor Tomaszuk

114-410 to 114-419 SENIOR LATIN LITERATURE (POETRY) *(Prerequisite:* intermediate Latin Literature or permission of the Department). A course — or courses — totalling six credits will be given in this field. Offered in 1976-77: 114-411D (6 credits).
Professor Tomaszuk

114-450 to 114-459 SENIOR LATIN LITERATURE (PROSE). *(Prerequisite:* as for 114-410 to 114-419). Two courses totalling six credits will be given in this field. Offered in 1976-77: 114-454A and 114-455B (3 credits each).
Staff (A)
Professor McCullagh (B)

Literature Courses: Ancient Greek

113-321A INTERMEDIATE ANCIENT GREEK: PROSE. (3 credits; *Prerequisite:* Classics 114-220D or permission of the Department). Plato, *Apology;* Xenophon, *Apology;* composition based on Plato, *Crito;* grammatical review.
Professor Schachter

114-322B INTERMEDIATE ANCIENT GREEK: PROSE. (3 credits; *Prerequisite:* as for 114-321A). Readings in Greek authors.
Professor Silverthorne

114-323D INTERMEDIATE ANCIENT GREEK: HOMER. (6 credits; *Prerequisite:* as for 114-321A). Elements of Homeric grammar, prosody and metre; survey of the historical background; reading and translating of some relevant passages of the *Iliad* and the *Odyssey* with pertinent commentary and discussion.
Professor Vivante

114-420 to 114-429 SENIOR ANCIENT GREEK LITERATURE (POETRY). A course — or courses — totalling six credits will be given in this field. *(Prerequisite:* Intermediate Ancient Greek Literature or permission of the Department). Offered in 1976-77: 114-424A and 114-425B (3 credits each).
Professor McCullagh (first term)
Professor Vivante (second term)

114-460 to 114-469 SENIOR ANCIENT GREEK LITERATURE (PROSE). Two courses totalling six credits will be given in this field. *(Prerequisite:* as for 114-420 to 114-429). Offered in 1976-77: 114-464A and 114-465B (3 credits each).
Professor McCullagh
Professor Silverthorne

Literature Courses: Modern Greek

114-430 to 114-439 SENIOR MODERN GREEK LITERATURE.
Professor Farmakides

Senior Classics Seminars

114-443A SEMINAR IN ARCHAEOLOGY. (3 credits).
Staff

114-444B SEMINAR IN ARCHAEOLOGY. (3 credits).
Staff

114-445A SEMINAR IN PAUSANIAS. (3 credits).
Professor Schachter

114-446B SEMINAR IN ARCHAEOLOGY. (3 credits).
Staff

Comprehensive Courses

114-482B INDEPENDENT RESEARCH COURSE FOR STUDENTS IN JOINT HONOURS IN ANTHROPOLOGY AND CLASSICAL ARCHAEOLOGY. (3 credits).
Staff

114-484B CLASSICAL IDEAS. (3 credits). A comprehensive course required for all students in the Program "Major in Classics (Culture and Society)" Other students may take this course by permission of the Department. (Not open to students who have taken 114-402B).
Professor Silverthorne and Staff

Undergraduate Classics Courses Which Will Not be Offered in 1976-77.

NOTE: Many of these courses will be offered in 1977-78.

114-207A CLASSICS IN TRANSLATION

114-221A ANCIENT GREEK FOR SPEAKERS OF MODERN GREEK.

114-235A MODERN GREEK GRAMMAR 1.

114-236A MODERN GREEK SPOKEN 1.

114-238A MODERN GREEK SPOKEN 2.

114-302B PROBLEMS IN GREEK MYTHOLOGY.

114-303D ROMAN HISTORY.

114-305D GREEK AND ROMAN ARCHAEOLOGY.

114-306B THE ROMAN CITY IN CIVILIZATION.

114-309A THE GREEK AND ROMAN NOVEL (IN TRANSLATION)

114-312B INTERMEDIATE LATIN: POETRY

114-315A INTERMEDIATE LATIN LITERATURE: POETRY

114-316B INTERMEDIATE LATIN LITERATURE: POETRY.

114-317A INTERMEDIATE LATIN LITERATURE: PROSE.

114-318B INTERMEDIATE LATIN LITERATURE: PROSE.

114-319A INTERMEDIATE LATIN LITERATURE: MEDIEVAL LATIN I.

114-335A INTRODUCTION TO MODERN GREEK LITERATURE 1.

114-336B INTRODUCTION TO MODERN GREEK LITERATURE 2.

114-338B MODERN GREEK LITERATURE OF THE 20th CENTURY 1. *Poetry.*

114-400B THE IDEA OF EPIC.

114-401A HELLENISTIC HISTORY.

114-403A MODERN GREEK HISTORY: FROM 1204 TO 1821.

114-404B MODERN GREEK HISTORY: FROM 1821 TO 1945.

114-405A GREEK AND ROMAN LITERARY CRITICISM.

114-406B ROMAN COMEDY AND HUMOUR.

114-407A LATER GREEK PHILOSOPHY.

114-409A INTRODUCTION TO GREEK AND ROMAN NUMISMATICS.

114-442B STYLE AND COMPOSITION.

114-470D REGIONAL STUDIES IN CLASSICAL ARCHAEOLOGY.

114-471D ROMAN IMPERIAL HISTORY.

114-472D GREECE UNDER THE ROMAN EMPIRE.

114-473A GREEK AND ROMAN RELIGIOUS IDEAS.

114-474B GREEK RELIGIOUS PRACTICES.

114-475A ROMAN BRITAIN.

114-476B HOMERIC ARCHAEOLOGY.

EAST ASIAN LANGUAGES AND LITERATURES (117)

Associate Professor — P.T.K.LIN *(Chairman)*
Lecturers — J. CHANG, W. GEDDES, P. WANG

3434 McTavish Street, Tel: 392-4280.

GENERAL INFORMATION

The Chinese language courses introduce both traditional characters as well as the simplified characters used in the People's Republic of China. Textbooks used are published in China, and supplemented by teaching materials prepared by the departmental staff.

During the academic year 1976-77, two levels of Japanese language will be offered. A Japanese literature course in translation will be offered for students who are interested in Japanese literature but unable to read Japanese.

It is hoped that students majoring in East Asian Studies will enrol in the language courses in addition to any other students interested in learning the language. Honours students must complete a three-year language sequence.

In order to accelerate language proficiency and to approximate a "total immersion" approach, cultural activities are organized by the department and the students, including luncheons where conversation is conducted in Chinese and Japanese.

COURSE DESCRIPTIONS

117-201D INTRODUCTION TO CHINESE LITERATURE. (6 credits, *Prerequisite:* Chinese 117-210D or 211D or equivalent) *Not given 1976-77.* A survey of the historical background of Chinese literature and the evolution of literary forms and styles in Chinese from the Confucian period to modern times.
Professor

117-210D FIRST LEVEL CHINESE. (6 credits). Introduction to the use of modern Chinese language (Mandarin), including instruction in basic grammar and patterns, with emphasis on speaking and pronunciation. Direct methods, as well as filmstrips and tape recordings are used for audio-lingual achievements.
Mrs. Wang

117-211D INTRODUCTION TO CONVERSATIONAL CHINESE. (6 credits). This course is designed for students with some background in the Chinese written language, who wish to perfect their ability to speak Chinese.
Ms. Chang

117-220D SECOND LEVEL CHINESE. (6 credits; *Prerequisite:* Chinese 117-210 or the equivalent). A continuation of Chinese 117-210D with more advanced study of Chinese language in both aspects of reading and conversation; grammar, vocabulary building and writing practice. Basic literary structures will be introduced, permitting the students to become familiar with the literature.
Mrs. Wang

117-310D THIRD LEVEL CHINESE. (6 credits; *Prerequisite:* Chinese 117-220D or the equivalent). Based upon the literary level achieved in Chinese 220D, more advanced texts will be studied including original materials. Further examination of Chinese compounds and sentences with special emphasis on syntax explanation. (Not open to students who have taken 117-300D).
Ms. Chang

117-410D FOURTH LEVEL CHINESE. (6 credits; *Prerequisite:* Chinese 117-310D or the equivalent). Emphasis is on reading skills and writing ability in addition to free discussion. Materials studied include original texts from Chinese literature, drama, government documents and newspapers. (Not open to students who have taken 117-400D).
Ms. Chang

117-205D HISTORY OF JAPANESE LITERATURE. (6 credits; Offered in alternate years; not given in 1977-78). A survey of the historical background of Japanese literature up to the contemporary period. Students are referred to translated texts, and knowledge of Japanese is not required.
Professor Geddes

117-215D FIRST LEVEL JAPANESE. (6 credits). Introduction to the basic grammar and sentence patterns of the Japanese language in both oral and written forms. In reading and writing skills students will be introduced to *katakana* and *hiragana*, and approximately 500 of *kanji*.
Professor Geddes

117-216D SECOND LEVEL JAPANESE. (6 credits; *Prerequisite:* 117-215D or the equivalent). Continuation of the study of oral and written Japanese. More complex sentence structures, the use of *keigo*, and approximately 500 more *kanji* will be introduced.
Professor Geddes

117-315D. THIRD LEVEL JAPANESE. (6 credits, *Prerequisite:* 117-216D or the equivalent). More advanced study of the Japanese language. Emphasis will be placed on practice in conversation and composition. On completion of the course, students will have learned all of the *toyo kanji.*
Professor Geddes

117-305D CONTEMPORARY JAPANESE LITERATURE. (6 credits). *Not given in 1976-77.* Discussion of creative writings by several representative authors, using both translations and original texts. Some knowledge of the Japanese language is desirable, but not required.
Professor Geddes

117-306D THE JAPANESE NOVEL IN ENGLISH TRANSLATION. (6 credits Offered in alternate years). *Not given 1976-77).* A study of the development of Japanese fiction. Major prose works ranging from the earliest classics through contemporary writing will be read in English translation. The continuity of native Japanese forms and values despite the pressure of foreign cultural and literary influxes will be stressed. No knowledge of Japanese is required.
Professor Geddes

117-405D ADVANCED TOPICS IN JAPANESE LITERATURE. (6 credits; *Prerequisite:* 117-305D or the equivalent). *Not given in 1976-77.* Consideration of selected topics and aspects of Japanese literature. The content of the course may vary from year to year, ranging from contemporary, modern to pre-modern literature.
Professor Geddes

117-492D TUTORIAL (6 credits). Advanced reading course in language or literature.

ECONOMICS (154)

Professors — A. ASIMAKOPULOS *(Chairman);* E.F. BEACH; I. BRECHER; E. KIERANS; J.C. WELDON; H.R.C. WRIGHT
Associate Professors — A. DEUTSCH; A. FENICHEL; M. FRANKMAN; C. GREEN; J.A. GALBRAITH; J. HANDA; S.H. INGERMAN; J. ITON; J. KURIEN; K. LEVITT; M.A. LOUTFI; M.F. LOUTFI; L. SODERSTROM; T. VELK; A. VICAS
Assistant Professors — P. DAVENPORT; G. GRANTHAM; F. MARTIN; R.T. NAYLOR;

Stephen Leacock Building, Room 434,
Telephone 392-5239

HONOURS PROGRAMS

All honours students must be registered by the Departmental Honours Adviser at the beginning of each year of their Honours program. An Honours student is not permitted to register for a general course where a parallel Honours course is offered. Honours students in economics are expected to take a minimum of 42 credits in approved economics courses over the three years of their program. These generally include 154-250D, 154-350D, 154-352D, 154-357D and 154-450D.

The Economics Honours program is offered to both B.A. and B.Com. students. The program allows for specialization in various fields in economics, such as labour, international trade, money and banking, development, economic history, etc.

Honours Standing

Students who wish to enter Honours in their U2 year must show evidence of adequate preparation

To remain in Honours, a student must obtain an A or B in 154-250D and a 3.0 average in the Honours subjects. An Honours student is expected to maintain a G.P.A. of 3.0 in all subjects.

A U1 student who narrowly missed the criteria to remain in Honours as stated in the preceding paragraph may apply for "redemptive' status for the U2 year. If granted, the student is not registered in Honours, but may take Honours courses. With acceptable progress the student may be readmitted to Honours in the U3 year.

The Honours standing awarded on graduation is determined by the results of the final year in conjunction with the student's entire record.

Mathematics

Much of the modern literature in Economics makes use of mathematical techniques. To enable honours students to work effectively with this literature, we recommend that during their program students master as much as possible of the material taught in the following courses (or their equivalents):

189-120A or B — Calculus I
189-121A or B — Calculus II
189-245A or B — Linear Algebra

U1 YEAR

Economics: 154-250D, 154-357D. (May be taken in U1 or U2). (Recommended optional course: Mathematics 189-120A,B and 189-121A,B).

U2 YEAR

Economics: 154-350D, 154-352D, 154-357D (May be taken in U1 or U2). (Recommended optional course: Mathematics 189-245A and 189-246B).

U3 YEAR

Economics: 154-450D.

Other Economics courses approved by the Honours Adviser.

JOINT HONOURS

Joint Honours between Economics and various other departments in the Faculty of Arts exist. As a general rule, a Joint Honours involving Economics requires a minimum of thirty credits from approved courses in Economics. These include 154-250D, 154-350D, 154-352D, 154-357D and 154-450D.

THE MAJOR PROGRAM

The Major Program in Economics is a planned sequence of courses designed to permit the student a degree of concentration in economics. It consists of 54 credits in courses approved by the Majors Committee of the Economics Department.

A student choosing a Major in Economics must take at least 36 credits of economics in addition to Economics 200D or its equivalent, and must normally take them at McGill. The economics courses will be selected from the courses shown below.

A. Prerequisite

Economics 200D *or* its equivalent: Economic Analysis and Applications.

B. Required Courses (12 credits)

Economics 300A — Intermediate Microeconomics.
Economics 310B — Intermediate Macroeconomics.
Economics 317D — Economic Statistics for Arts students.

C. Economics Elective Courses: At least 24 credits from other 200, 300 and 400 level courses.

D. Other Approved Courses:

In addition to the minimum of 36 credits in Economics, the student will choose a total of 18 credits from *two* of the following fields:

Anthropology
Economics
French Canada Studies
Geography
History
Mathematics
Philosophy
Political Science
Psychology
Sociology

All students who wish to begin (or continue) a Major *must* register with the Majors Committee in the Department of Economics prior to general registration in *each* of their university years. Further information may be obtained from Professor A. Fenichel, Leacock 533, telephone: 392-5886.

COURSE DESCRIPTIONS

Supplementary Information: This announcement is prepared early in the year and so is likely to need modification by the time the academic year begins. A mimeographed supplement is available at the departmental office in September and should be consulted prior to registration with the Honours or Major advisers.

Economics 200D or 250D is normally a prerequisite for all 300 and 400 level courses in Economics. Students whose previous training is deemed adequate for taking specific courses at the 300 or 400 level may be exempted by the instructor. A departmental representative will be available to advise students and program advisers in other departments on individual course prerequisites.

NOTE: * Denotes a course not offered in 1976-77.

154-200D ECONOMIC ANALYSIS AND APPLICATIONS. (6 credits). A University level introduction to price theory, national income determination, money and banking, international trade theory and economic policy. The course will be given in several sections. Sections will be designed to accommodate students with varying backgrounds in economics.
Professors Fenichel, Grantham, Green, Velk and Weldon

154-201D INTRODUCTION TO EUROPEAN ECONOMIC HISTORY (6 credits). A survey course in western economic history from classical times to the twentieth century. The course will consider the evolution of economic institutions and the process of economic growth. Topics covered include demographic change, agrarian institutions, financial and industrial organization, technological change and the expansion of trade and markets.
Professor Grantham

154-205D AN INTRODUCTION TO APPLIED POLITICAL ECONOMY. (6 credits). The concept of the corporation, the economics of crown corporations, the multi-national firm, resources policy and economic development of Quebec. (Not open to students who have previously taken 154-205A).
Professor Kierans

154-211D INTRODUCTION TO CANADIAN ECONOMIC HISTORY. (6 credits). A survey of the economic basis of Canadian history from the French regime to the twentieth century, with a view to examining the historical roots of contemporary problems of the Canadian economy and society. The structure role and evolution of economic institutions are stressed.
Professor Naylor

154-241D THE INTERNATIONAL ECONOMY SINCE 1850. (6 credits). The effect of economic change in Britain, France, Germany, and the United States on their role in the world economy and on the economic relations between nations. Not open to students who have taken 154-201D. in 1973-74 or previously).
Professor Wright

154-250D INTRODUCTION TO ECONOMIC THEORY. (6 credits). The standard topics covered in an intermediate level microeconomic course — theory of exchange; theory of consumer behaviour; theory of production and cost curves, theory of the firm; theory of distribution; general equilibrium; welfare economics — will be dealt with in the course. The assumptions underlying the traditional neoclassical approach to economic theory will be carefully speci-

fied and alternative theoretical approaches will be considered.
Professor Asimakopulos

154-300A INTERMEDIATE ECONOMIC THEORY. (3 credits). Microeconomics: Analysis of price determination in a market economy, problems of economic efficiency and market structures.
Professor Iton

154-301B THE MODERN ECONOMIC HISTORY OF SOUTH ASIA. (3 credits, *Prerequisite.* any Economics 154-200 level course).
Professor Wright

154-302D MONEY AND BANKING. (6 credits). Principles of money, banking, and central banking covering the nature of money, measurement of money supply, determination of the quantity of money; sources of bank funds, uses of bank funds, nature of central banking, monetary policy and the international payments system.
Professor Galbraith

154-304D CANADIAN ECONOMIC POLICY. (6 credits). The application of economic analysis to real problems in a Canadian setting.
Professor Deutsch

154-305D GOVERNMENT AND BUSINESS. (6 credits). A study of the structure and performance of industrial markets, with particular emphasis on the problems of maintaining effective competition. Experience in Canada and other countries will be examined. Readings will cover leading law cases, as well as relevant economic literature.
Professor Green

154-306D LABOUR ECONOMICS AND INSTITUTIONS. (6 credits). Part A: Quantitative and qualitative characteristics of the Canadian labour force; evolution of the industrial relations system; history and structure of the labour movement, theories of the labour movement, elements of labour law. Part B: Employment and unemployment; manpower policy; wage theory; collective bargaining and public policy; income distribution and problems of poverty; current policy issues. (This is a prerequisite course to 154-426D and 279-492D except in the case of Honours students).
Professor Ingerman

154-310B INTERMEDIATE ECONOMIC THEORY. (3 credits). Macroeconomics: Analysis of economic stability; national income determination, economic fluctuations and growth, monetary and fiscal policy.
Professor Beach

154-311A UNITED STATES ECONOMIC DEVELOPMENT (6 credits; Prerequisite: any Economics 200 level course). A study of economic growth and institutional change in the United States to World War I. (Not open to students who have previously taken 154-311D).
Professor Fenichel

154-312D POLITICAL ECONOMY OF DEPENDENCE IN THE WESTERN HEMISPHERE. (6 credits). A comparative study of contemporary economic structures in the "peripheral" economies of Canada, the Caribbean and Latin America — with special emphasis on Canada and its constituent regions. The legacy of European colonization; trade and investment; operations of multinational corporations; preferences, common markets and foreign aid; the new economic nationalism of the western hemisphere.
Professor Levitt

154-313D ECONOMIC DEVELOPMENT. (6 credits). The economics of structural change in developing countries. An examination of the applicability of economic theory in the context of development. Historical patterns of economic change in the developing world; economic planning; role of international trade and foreign aid in economic development; techniques of evaluating development projects; interdisciplinary problems of development.
Professor Kurien (first term)
Professor Iton (second term)

* **154-314B AFRICAN ECONOMIC DEVELOPMENT.** (3 credits). An analysis of the processes of economic growth in tropical Africa. Special emphasis will be placed upon natural resources, population, infrastructure, agriculture, trade and aid, the role of government and the parastatal institutions. The course is especially recommended to students enrolled in the African Studies Pro, and for those wishing to continue in development economics.

154-315B ECONOMIC DEVELOPMENT OF CHINA. (3 credits)I A consideration of economic change in China since 1949. Emphasis is on the approach China has taken to development, its success in solving problems in various sectors of the economy and a comparison with approaches to development used in other countries.
Professor Wright

154-317D ECONOMIC STATISTICS (6 credits). Distributions, averages, dispersions, sampling, testing, estimation, correlation, regression, index numbers, trends and seasonals.
Professor Beach

154-321D THE QUEBEC ECONOMY. (6 credits; Prerequisite: 154-200D or 154-205D or 154-211D). A study of the economic development of Quebec and contemporary economic problems in the province. Topics include: agriculture and economic development (1780-1850); the industrial revolution in Quebec (1850-1930); the Great Depression; the economics of the Quiet Revolution; unions and labour relations; poverty and welfare programs; health; unemployment and regional economic expansion; industrial structure and foreign ownership; the economics of Quebec nationalism. (Not open to students who have previously taken 154-411A).
Professor Davenport

154-327A POPULATION ANALYSIS IN DEVELOPMENT ECONOMICS. (3 credits; *Prerequisite* any course in Development Economics). A review of theories of population growth, past trends and forecasts. Analysis of population change in developing countries, mortality, fertility, and migration. A study of interrelations between population growth and economic development in these less-developed economies.
Professor Iton

154-331A THE ECONOMIC DEVELOPMENT OF RUSSIA AND THE USSR. (3 credits; *Prerequisite:* any Economics 154-200 level course). An historical and analytical study of the special features of Russian economic development, mainly since 1890.
Professor Wright

* **154-341A THE ECONOMIC HISTORY OF CHINA AND JAPAN, MAINLY FROM 1840 TO 1949.** (3 credits). A survey of the economic histories of China and Japan to the mid-20th century, emphasizing the factors underlying their contrasting economic patterns.

154-350D HISTORY OF ECONOMIC THOUGHT. (6 credits). A critical study of the writings of the great economists, with particular reference to the period from Adam Smith to the present day.
Professors Brecher and Vicas

154-352D MACROECONOMICS. (6 credits). A rigorous treatment of basic macroeconomic theory, emphasizing the Classical and Keynesian ideas, for the short-run determination of output, employment, interest rates and prices in the economy. Elements of International Economics, Money and Banking and Growth Theory. The Structure of the Canadian Economy.
Professor Handa

154-357D ECONOMIC STATISTICS. (6 credits). Stochastic phenomena; probability and frequency distributions, introduction to probability theory. Statistical inferences about proportions, means and variances; analysis of variance; non-parametric statistics; index numbers and time series; economic forecasting; regression and correlation analysis; introduction to the general linear economic models, its uses and limitations; uses and misuses of statistics; Canadian economic statistics.
Professor Kurien

* **154-367D MATHEMATICAL ECONOMICS.** (6 credits). A mathematical treatment of basic economic theory.

154-400D THEORY OF THE FIRM. (6 credits). The economic analysis of the firm: numerous case studies are used to supplement the survey of theory. Topics covered include pricing decisions by firms under different market conditions, the role of financial markets in affecting business behaviour, mergers, conglomerates and multinational corporations, crown corporations, the performance of firms in regulated industries.
Professor Vicas

* **154-402A ECONOMIC HISTORY OF LATIN AMERICA.** (3 credits). The historical evolution of economic institutions in Latin America and the effect of that evolution on the economic development of that region from pre-colonial times through the end of World War II.
Professor Frankman

154-403B ECONOMIC DEVELOPMENT IN LATIN AMERICA. (3 credits). An analysis of the process of structural change and development of the Latin American economies since 1945.
Professor Frankman

154-404D TRANSPORTATION. (6 credits). History and development of the Canadian transportation system; economic characteristics of the various transportation media; comparative analysis of cost and rate structures; problems of regulation and control.
Professor McPherson

154-408D PUBLIC FINANCE. (6 credits). Theory and institutions, mostly in a Canadian setting, of government spending and taxation.
Professor Deutsch

* **154-409D INVESTMENT ANALYSIS AND CORPORATION FINANCE.** (6 credits). Part 1 — investment; capital markets; investment funds; securities; concepts of income, risk, value and appreciation; analysis of financial statements; stock market; investment policy. Part II — Forms of business organization; growth of the corporation; the managerial revolution; sources of funds; management of fixed and working capital; ratio analysis; expansion, reorganization and valuation.

154-421D COMPARATIVE ECONOMIC SYSTEMS. (6 credits; *Prerequisite:* 154-200D or 154-250D or consent of instructor. It is desirable, but not required, that students should have taken 154-331A and 154-341A). A comparative study of the economic systems of contemporary states.
Professor Fenichel

154-423D INTERNATIONAL TRADE AND FINANCE. (6 credits; for Majors students). Theoretical and policy approaches to the study of international economic relations. Topics examined include: trade theory; tariff theory; trade and growth; balance of payments; adjustment; international monetary reform.
Professor Frankman

154-425B ECONOMICS OF ECOLOGY. (3 credits). A study of the application of economic theory to the problems of ecology. Particular attention will be given to the measurement and regulation of pollution, congestion and waste and other environmental aspects of specific economies.
Professor Frankman

154-426D LABOUR ECONOMICS. (6 credits). This course will focus on inflation problems and incomes policy during the fall and on current unemployment problems during the spring. The discussion of unemployment will involve a review of traditional models of unemployment as well as recent work on the effects of the rapid growth of women and youths in the labor force, changes in unemployment insurance legislation and the search behaviour of employers and workers. The discussion of inflation and incomes policy will include a review of the literature on wage determination and the experiences Canada and other countries have had with incomes policies.
Professor Soderstrom

154-431A SEMINAR IN CANADIAN ECONOMIC HISTORY. (3 credits; *Prerequisite:* 154-200D and either 154-211D or 154-321D). A discussion of selected topics in Canadian Economic History.
Professor Naylor

154-434B CURRENT ECONOMIC PROBLEMS. (3 credits). A discussion of contemporary problems of the Canadian economy. Topics will include the relations of big business and government, foreign investment and technological dependence, the distribution of income, the balance of payments, the economics of resource exploitation, and the "energy crisis". (Not open to students who have previously taken 154-454A).
Professor Naylor

154-440B HEALTH ECONOMICS. (3 credits; *Prerequisite:* 154-200D or consent of instructor). An examination of various problems in the provision of health services from an economists' perspective. Topics will include the determinants of health, the economic performance of physicians, hospitals and other providers of health services, and the determinants of demand for health services. Various proposed reforms of the health system will be reviewed. Readings will be drawn from the economics and health care literature.
Professor Soderstrom

154-444A VALUES, INSTITUTIONS AND ENVIRONMENT IN ECONOMICS. (3 credits). A critical examination of the scope and method of economics, of the philosophical and value underpinnings of economic theory, and the influence of institutions and environment on 'economic' phenomena. Particular attention will be given to the works of writers who have dissented from the 'mainstream' of economics. (Not open to students who have previously taken 154-455B).
Professor Velk

154-450D ADVANCED ECONOMIC THEORY. (6 credits). Selected topics in economic theory from recent periodical and monograph literature. Information on the topics to be covered can be obtained from the Department before registration.
Professors Asimakopulos and Weldon

154-451B SEMINAR IN ECONOMIC HISTORY. (3 credits). In this course economic theory is explicitly employed to elucidate issues in economic history. The topics will be announced at the beginning of the academic year. (Not open to students who have previously taken 154-401A).
Professor Grantham

154-453D INTERNATIONAL ECONOMICS. (6 credits, for Honours students). Analysis of the nature, effects and policy implications of international trade and finance. Topics receiving special emphasis will include: the pure theory of trade; the balance of payments and alternative exchange-rate systems; the terms of trade; the foreign-trade multiplier; regional integration; trade policy in developed and developing countries; problems of international liquidity and investment.
Professor Brecher

* **154-457A LINEAR PROGRAMMING AND INPUT—OUTPUT ANALYSIS.** (3 credits, *Prerequisite:* consent of the instructor). National Economic Accounting, including input-output, and flow of funds accounts. Analytical uses relating to the impact of public and other expenditures on incomes, imports, savings, employment, etc.

154-458D MONEY AND BANKING. (6 credits). An advanced undergraduate treatment of selected topics in money and banking, including the theory and practice of monetary policy.
Professor Velk

154-467D ECONOMETRICS (6 credits; *Prerequisite:* 154-357D or consent of instructor). Special emphasis on statistical tests of economic theories, the construction of econometric models, and problems in estimation methods.

154-468A URBAN AND REGIONAL ECONOMICS. (3 credits). This course is meant to be an introduction to location theory and to urban and regional economics. Its purpose is also to teach some elementary tools of analysis to people intending to do research, applied or pure, in this field.
Professor Martin

154-480A RESEARCH PROJECT. (3 credits; *Prerequisite:* open to U3 students). Students may undertake a research project under close supervision. They must also do such special reading and research as their advisers may direct.

154-481B RESEARCH PROJECT. (3 credits; *Prerequisite:* open to U3 students). Students may undertake a research project under close supervision. They must also do such special reading and research as their advisers may direct.

Where appropriate to a student's program, and with the permission of the program adviser, one or more of the following courses may be taken for credit by students enrolled in programs in Economics. 279-294A,B may be taken for credit by students in the Industrial Relations Major, but not as an elective for students taking a Major in Economics.

279-294A,B INTRODUCTION TO INDUSTRIAL RELATIONS. (6 credits; 154-200D or 154-250D is not a prerequisite). An introduction to the problems of labour-management relations, the structure, function and government of labour unions, labour legislation, the collective bargaining process, and the public interest in industrial relations.
Professor Bairstow

279-394B COLLECTIVE BARGAINING. (3 credits; *Prerequisite:* 154-200D). This course is designed for those students who wish to study principles in collective bargaining in Canada and abroad. It deals with the structure of the bargaining parties and the structure of bargaining itself. It is problem-oriented and will rely heavily on empirical data and case problems.
Professor Woods

279-491D INDUSTRIAL RELATIONS IN PRACTICE. (6 credits; Compulsory for fourth year Industrial Relations Majors. Others by permission of the instructor). Students in this course will be encouraged to come to grips with a wide range of problems in industrial relations theory, policy and practice. This is achieved by means of guided reading and small discussion groups, mock collective bargaining sessions, contact with practitioners in the field and problem-oriented research assignments.
Professor Goldenberg

279-492D PUBLIC POLICY IN INDUSTRIAL RELATIONS. (6 credits; *Prerequisite:* 154-306D). Collective bargaining and public policy towards industrial relations. Emphasis will be placed on recent public investigations into labour relations in the federal and provincial jurisdictions; international comparisons will be included.
Professor Woods

EDUCATION (413)

See the separate *Announcement of the Faculty of Education* for complete information about courses leading to the Bachelor of Education degree.

The course below is offered by members of the staff of the Faculty of Education as a subject for the B.A. or B.Sc. degree. This course does not lead to a teaching diploma.

413-402D COMPARATIVE EDUCATION (6 credits; Open to students in U2 and U3). A study and comparison of recent educational developments in England, France, Germany, the Soviet Union, and the United States.
Professor Lipkin

ENGLISH (110) (Formerly 120)

Professors — PETER BUITENHUIS; C.D. CECIL *(on leave 1976-77)*; LOUIS DUDEK; JOYCE HEMLOW; ALAN HEUSER; SLAVA KLIMA; ALEC LUCAS; HUGH MACLENNAN; A.E. MALLOCH; HUGO McPHERSON *(on leave 1976-77)*; DONALD F. THEALL

Associate Professors — BHARATI BLAISE; D. BOUCHARD; M. BRISTOL; M. BRUCE *(on leave 1976-77)*; D. COLE; M. DAVISON; M. DORSINVILLE; D.C. FRYE; I. GOPNIK; PAUL H. PIEHLER; MARTIN PUHVEL; RONALD REICHERTZ; JOHN RIPLEY; B. ROBINSON; J. RONSLEY; D. SUVIN; B.F. WEEMS; W. WEES; D. WILLIAMS

Assistant Professors — H.S. ANDERSON; A. CONWAY *(on leave 1976-77) (Associate Chairman)*; L.T. DUER; L.T. ELLIOTT; A.R. GODFREY; C.A.E. HEPPNER; M. STENBAEK-LAFON *(on leave 1976-77)*; LEANORE LIEBLEIN; YEHUDI LINDEMAN; D.S. RUBIN; M. SIMON; R. TEMBECK

Assistant to the Chairman — W.T. BOOTH

Departmental Office: Room 155, Arts Building, Telephone 392-4987

The Department of English divides its activities into three options: literary studies, drama, and film and communications. With the exception of the Honours tutorials, all courses in all streams are open to McGill students, irrespective of the Honours or Major programs in which they are enrolled. Honours and Major students in English concentrate in one option, but are required to become acquainted with each of the others.

In literary studies (Option 1) the department offers a considerable diversity of courses in the various historical periods of English literature, in Canadian literature, American literature, Caribbean and African literatures in English, the various literary genres, creative writing, literary criticism, stylistics and the linguistic structure of English. While members of the department are engaged in study and research in all of these areas, the Department has come to be regarded as having certain specific strengths, particularly in literary theory, comparative literature, and Renaissance literature. In conjunction with other Montreal universities, there is also considerable activity in the field of Medieval literature.

In addition to the study of dramatic literature as a genre, it is possible to pursue undergraduate studies in dramatic theory and various aspects of drama in production (Option II). The Drama Program tries to place its subject in as broad a social and philosophical context as possible. Students are encouraged to include in their studies the maximum number of Humanities, Social Sciences, and Fine Arts courses. Students in the Drama and Theatre Major choose their specialized courses from a series of courses in dramatic literature, theatre history, aesthetics and dramatic criticism, acting, stagecraft, design and theatre technology. From year to year courses are also given in special interest areas when student demand is sufficient.

The study of Communications (Option III), while located in the Department of English, intersects with many other academic disciplines, such as sociology, psychology, linguistics, and fine arts. Such an approach means that the student must take a wide variety of Film and Communications courses as well

as courses in English literature and drama and may also take courses in other disciplines associated with this study.

A foundation for the study of Communications is a concentration on the problems of human language and interaction as well as the media through which these may be disseminated and transformed.

MAJOR PROGRAMS IN ENGLISH

The Major program in English combines both a concentration and a distribution of study. A student majoring in English will normally concentrate his work in one of the three options. In each case, the Major program consists of 54 credits, but the distribution of work in each of the options varies somewhat. *Students are advised to consult the Departmental Handbook for the specific regulations which apply to the various options in the major program.*

Option 1 — Literature

The Major program in Literature (Option I) requires the student to gain a wide acquaintance with the field of literary study. Work is normally distributed among at least three of four categories of courses: periods and national literatures; major authors; literary theory and criticism, and genre, theme and style. In addition to this required distribution, students may elect to pursue a concentration in one of those areas, and all students in Option I must take at least six credits in Option II (Drama) and six in Option III (Film and Communications). Six of the 54 credits may be taken, with permission, in a discipline other than English.

Option II — Drama and Theatre

Students in the Drama and Theatre option may concentrate their studies in either Drama *or* Theatre. Those opting for the former area devote more attention to the literary and theoretical aspects of the subject, while those selecting the latter include more practical classes in their programs. All students must, to some extent, combine both practical and theoretical work.

The Drama and Theatre curriculum is not designed to provide professional theatre training. Our aim is rather to permit students to explore the subject as a Liberal Arts discipline.

In consultation with their faculty advisers, students select a minimum of 54 credits in English Twelve of these must be chosen from the Literature and Communications options while the rest are drawn from Drama and Theatre offerings in the following areas: Dramatic Literature, Theatre History, Theatre Aesthetics and Dramatic Criticism, Acting, Directing, and Theatre Practice. Classes are also given in special interest areas from year to year. At least two public productions are staged annually.

Option III — Film and Communications

The Film and Communications option in English studies stands as a recognition of the wider role aesthetic forms now occupy in modern cultural life. It is the special interest of the department to underscore this development through an understanding of film and electronic media as vital aspects of text in order to reflect significant concerns with symbolic form, linguistics analysis, and criticism associated with both verbal and non-verbal modes. It is to be understood that the program does not stress the kinds of professional training more suitably carried out by institutes of technology; however, limited practical experience may be obtained.

The wide scope of concerns encompassed by the study of communications necessitates that the individual's program be worked out in consultation with an adviser. Three core courses are required which introduce the student to the integration of diverse approaches to the problems of human expression and interaction.

Of the 54 credits required for the completion of an Option III Major program, at least 18 credits must be drawn from the literature and/or drama options in the English Department. The three core courses constitute 18 credits, and the remaining 18 credits are chosen in consultation with an adviser from a list of courses available from the department.

HONOURS PROGRAMS IN ENGLISH

The Honours Program is characterized by a sequence of tutorials and by the pursuit of a program exhibiting sufficient range and comprehensiveness in depth and breadth within one of the options of Literature, Drama, or Film and Communications, together with some familiarity with the work carried on in each of the other options.

The Honours Program, therefore, requires a minimum of 60 credits within the Department, carried on under the supervision of the Honours Program Committee, which the student must satisfy with respect to the rationale and comprehensiveness of his total program of courses within and outside the Department.

The Honours Committee will review the student's program each year, to determine that it shows sufficient range, depth, breadth and comprehensiveness.

HONOURS TUTORIALS

All Honours students, whatever their core, will be required to pursue one of two sequences of Honours tutorials that will deal with the various theories, concepts, and tools required in the examination of written texts, presentations, productions and the like.

110-290D Archival and Information Skills *or* 110-294D Bibliography and Textual Study.

110-390D Linguistic or Symbolic Analysis *or* 110-394D Approaches to Literature; Drama and Film.

110-490D Historical Analysis *or* 110-494D History of Literary Theory and Criticism and Aesthetics.

Admissions

Any U-1 student may indicate an intention to pursue an Honours program but admission becomes final only in the U-2 year. Admission to U-2 is based on having an *overall standing of 'B'* in the year's work and an average of 'B' in all English courses as well as a recommendation from individual instructors. Since the program may be limited to as few as 25-40 students (though its size will be determined by staff) not all students opting for entry into Honours may be able to do so.

Students electing Honours in the U-1 year must take one of two tutorials (290D or 294D) described above. They also must register in sufficient English courses to provide for the development of an appropriate core program in Literature, Drame or Film and Communications.

JOINT HONOURS PROGRAM

Joint Honours programs in English and various disciplines in the Faculty of Arts are available to qualified students. From the point of view of the Department of English, students in such programs are required to complete one of the tutorial sequences described above (see *Honours in English).* The remainder of each student's program is arranged to suit the particular circumstances and interests involved in consultation with an adviser and the Honours Committee. Admission to this program is quite limited.

FURTHER INFORMATION RELATING TO DEPARTMENTAL PROGRAMS AND DETIALED DESCRIPTIONS OF COURSES MAY BE OBTAINED AT THE ENGLISH OFFICE, ROOM 155, ARTS BUILDING.

ENGLISH LITERATURE ASSOCIATION

The English Literature Association (an association of all students taking courses in the Department of English) publishes a guide to English courses, which is available either in the English office or in Room B-20, Arts Building.

TABLE OF ENGLISH DEPARTMENT COURSES

NOTE 1: ENGLISH DEPARTMENT COURSES HAVE BEEN EXTENSIVELY RENUMBERED. WHERE THIS HAS TAKEN PLACE, THE FORMER NUMBER IS INDICATED IN PARENTHESES. STUDENTS WHO, PRIOR TO 1974-75, TOOK SUCH COURSES UNDER THEIR OLD NUMBERS MAY NOT RE-TAKE THEM UNDER THEIR NEW NUMBERS.

NOTE: 2 COURSES MARKED WITH AN ASTERISK (*) WILL NOT BE GIVEN IN THIS ACADEMIC YEAR.

COURSE DESCRIPTIONS

100-Level Courses

110-100D ENGLISH LITERATURE AND COMPOSITION. (6 credits). The main purpose of this course is to develop or improve students' ability to write and to organize and express ideas. The course has a general reading list and a major writing component. Students entering English 100D are assumed to have fluency in English. The English Department should be consulted for further information.
Staff

200-Level Courses

110-200A SURVEY OF ENGLISH LITERATURE I. (3 credits). A general introduction to English Literature to the Restoration.
Professor Piehler

110-201B SURVEY OF ENGLISH LITERATURE II. (3 credits; *Prerequisite:* 110-200A or Permission of Instructor). A general introduction to English Literature from the Restoration to the present.
Professor Piehler

110-208A THE ENGLISH NOVEL OF THE 19TH CENTURY I. (3 credits). A study of representative novelists of the earlier 19th century.
Professor Malloch

110-209B THE ENGLISH NOVEL OF THE 19TH CENTURY. (3 credits, *Prerequisite:* 110-208A). A study of the representative novelists of the later 19th century.
Professor Malloch

110-210D. (120-214D) ENGLISH POETRY OF THE 19TH CENTURY. (6 credits). A survey course of 19th century English poetry.
Professor Simon

110-213A. (120-218A) PPOETRY OF THE 20TH CENTURY I. (3 credits). A critical survey of major British and North American poetry.
Professor Simon

√ **110-214B. (120-219B) POETRY OF THE 20TH CENTURY II.** (3 credits). A critical survey of major British and North American Poetry.
Professor Simon

√ **110-215A,B (120-212A/B) INTRODUCTION TO SHAKESPEARE I.** (3 credits).
Professors Duer and Heppner

110-216B (120-211B) INTRODUCTION TO SHAKESPEARE II. (3 credits; Prerequisite: 215A or 215B, or consent of the instructor). A continuation of 215A,B.
Professor Davison

* **110-225A (120-230A) AMERICAN LITERATURE I.** (3 credits). A study of the literary works of earlier American writers.

* **110-226B (120-231B) AMERICAN LITERATURE II.** (3 credits). A study of the literary works of later American writers.

* **110-228A CANADIAN LITERATURE I.** (3 credits). Introduction to Canadian literary writing in English. In 1976-77 the emphasis will be on poetry, mainly from the 19th and 20th centuries.
Staff

110-229B CANADIAN LITERATURE II. (3 credits). Introduction to Canadian literary writing in English. In 1976-77, the emphasis will be on prose writing, particularly of the 20th century.
Staff

110-230D (120-210D) AN INTRODUCTION TO DRAMA. (6 credits). A survey of major types and authors of Western Drama.
Professor Anderson

* **110-235A TRAGEDY.** (3 credits). A study of tragedy as genre and mode in drama and fiction.

* **110-236A COMEDY I.** (3 credits). A study of comedy through the examination of representative texts.
Staff

* **110-237B COMEDY II.** (3 credits). A study of comedy through the examination of representative texts.

110-245D BACKGROUNDS TO ENGLISH LITERATURE. (6 credite). English Literature and the evolution of Western civilization.
Professor Robinson

110-246D ENGLISH LITERATURE AND FOLKLORE. (6 credits). A study of representative texts of English Literature in relation to their background in folk tradition.
Professor Puhvel

* **110-248D (120-221) THE GREAT WRITINGS OF EUROPE, 1550-1850.** (6 credits). An analysis of representative works of European Literature to 1850.

* **110-249A AN INTRODUCTION TO ORAL LITERATURE.** (3 credits). An introduction to the principles of verbal folklore and selected myths, legends, and tales.

* **110-251D ANGLO-SAXON LITERARY CULTURE.** (6 credits). Old English literature in translation; its social and cultural milieu and language.

110-252A,B (120-233A,B) THE STRUCTURE OF THE ENGLISH LANGUAGE. (3 credits). A linguistic study of the English language.
I. Bellert

110-253A,B (124-234A,B). THE HISTORY OF THE ENGLISH LANGUAGE. (3 credits; *Prerequisite:* English 252A,B or Linguistics 200A,B). A linguistic study of the English language.
I. Bellert

110-254A,B (120-238A,B) THE ENGLISH LANGUAGE AND THE STUDY OF LITERATURE. (3 credits; *Prerequisite:* English 252A,B or Linguistics 200A,B). A continued linguistic study of the English language and its application to literature.
I. Bellert

110-260D (120-250D) APPROACHES TO LITERARY STUDY. (6 credits). A study of critical methods and their validity in relation to specific literary texts.
Professor Booth

* **110-265D THEATRE LABORATORY.** (6 credits). An exploration of a dramatic text through production. Co-requisite courses are required. For details of texts and current co-requisites students should consult the instructor before registration.
Staff

110-266D (120-377D) MODERN THEATRE PRACTICE. (6 credits). Introduction to the technical and practical aspects of drama production.
D. Hoffman

* **110-267D (120-232D) VOICE AND SPEECH I.** (6 credits). The voice in theory and practice; development of practical oral skills

* **110-268D (120-213D) HISTORY OF THE THEATRE I.** (6 credits). History of theatre in Asia and Europe from origins to Renaissance.

110-269D (120-275D) FUNDAMENTALS OF DRAMA AND THEATRE. (6 credits). A practical and theoretical study of the individual and collective creative process and the actor's approach to it.
Professor Ripley

* **110-275D COMMUNICATIONS AND LITERATURE.** (6 credits). Study of the Communication process and its relevance to literature. (Not open to students who have taken 110-275A or 110-276B).

110-278D MASS MEDIA CRITICISM. (6 credits). The nature of judgements that can be made about the products of the mass media.
Staff

110-279D (120-338D) INTRODUCTION TO THE FILM. (6 credits) An introductory study of the cinema as a medium.
Staff

110-290D HONOURS TUTORIAL I. (6 credits). Archival Skills: study of techniques of research.
Professor Bristol

* **110-294D (120-295D) HONOURS TUTORIAL I — ALTERNATE.** (6 credits). Emphasis on biography, bibliography and textual study.

* **110-295A (120-309A) SPECIAL TOPICS OF LITERARY STUDY.** (3 credits). Specific subjects of literary study which vary from year to year.

* **110-297D (120-307D) SPECIAL TOPICS OF LITERARY STUDY.** (6 credits). Specific subjects of literary study which vary from year to year.

300-Level Courses

110-300D (120-310D) RENAISSANCE ENGLISH LITERATURE. (6 credits). A study of the major writers of the 16th and early 17th centureis.
Professor Lieblein

* **110-302A (120-353A) RESTORATION AND 18TH CENTURY ENGLISH LITERATURE I.** (3 credits). A study of the major writers of the late 17th and earlier 18th centureis.

* **110-303B (120-354B) RESTORATION AND 18th CENTURY ENGLISH LITERATURE II.** (3 credits). A study of the major writers of the later 18th century.

* **110-304D (120-332D) THE ENGLISH NOVEL TO 1800.** (6 credits). Special emphasis on the novel of the 18th century.

* **110-306A (120-324A) MEDIEVAL AND TUDOR DRAMA** (3 credits).

110-308A (120-325A) ELIZABETHAN DRAMA. (3 credits).
Professor Leiblein

110-309B (120-326B) JACOBEAN DRAMA. (3 credits).
Professor Duer

* **110-310A (120-355A) RESTORATION AND 18TH CENTURY DRAMA.** (3 credits). Representative plays from Etherage to Sheridan.

* **110-312B (120-356B) DRAMA OF THE VICTORIAN AND EDWARDIAN AGES.** (3 credits). Representative English plays from Byron to Galsworthy.

* **110-314A (120-336A) 20TH CENTURY DRAMA.** (3 credits). A survey of representative works of 20th Century Drama.

110-315D (230-372D) SHAKESPEARE. (6 credits; *Prerequisite:* 215A,B, or consent of the instructor). An advanced course in Shakespeare.
Professor Frye

110-316B (120-315B) MILTON (3 credits).
Professor Bouchard

110-320D (120-306D) THIRD WORLD LITERATURE. (6 credits). A study of literary works from Africa, the Carribean and South America
Professor Dorsinville

110-321A (120-304D) CARIBBEAN LITERATURE. (3 credits). (Not open to students who have taken 110-322D).
Professor Elliott

110-323A (120-334A) 20TH CENTURY AMERICAN POETRY. (3 credits).
Professor Elliott

* **110-325D (120-335D) MODERN NORTH AMERICAN FICTION.** (6 credits). A study of representative American, French and English Canadian writers.

110-327D (120-360D) THE DEVELOPMENT OF PROSE FICTION IN CANADIAN LITERATURE. (6 credits). A survey of Canadian fiction writers from the early 19th century to the present.
Professor Lucas

110-329D (120-340D) 20TH CENTURY CANADIAN LITERATURE. (6 credits).
Professor Dudek

* **110-330D (120-329D) THE MODERN DRAMA.** (6 credits) A study of the major movements in modern drama.

110-333D ENGLISH PROSE FROM BACON TO THE PRESENT. (6 credits). The development of English prose traced through detailed study of authors representative of each period.
Professor MacLennan

110-335D (120-314D) THE MODERN NOVEL. (6 credits). A study of major novels written in English in the 20th century.
Professor MacLennan

110-336D THE DEVELOPMENT OF THE NOVEL. (6 credits). A survey of the evolution of the genre from its conception to the present.
Professor Weems

* **110-337D (120-342D) THE ART OF POETRY.** (6 credits). Studies in poetics.

* **110-338B (120-343B) THE SHORT STORY.** (3 credits). A study of significant trends in short story writing.

110-340A INTRODUCTION TO CHILDREN'S LITERATURE I. (3 credits). A survey of the development of children's literature. (Not open to students who have taken 110-343B or 110-297L in the summer of 1975).
Professor Reichertz clown

110-341B INTRODUCTION TO CHILDREN'S LITERATURE II. (3 credits). *(Prerequisite*: English 110-340A). Aesthetic, sociological and psychological views of children's literature. (Not open to students who have taken 110-343B or 110-297L in the summer of 1975).
Professor Reichertz

110-342B SPECIAL TOPICS IN CHILDREN'S LITERATURE. (3 credits; *Prerequisite:* 110-341B or Permission of Instructor)
Professor Reichertz

110-344D LITERATURE AND SCIENCE. (6 credits). A study of the parallel structures of historical evolution in literature and science.
Professor Suvin

* **110-345D LITERATURE AND SOCIETY.** (6 credits).

110-346D (120-352D) ART AND LITERATURE. (6 credits). A study of the relationship between literature and the visual arts.
Professor Davison in computer

110-348D (120-308D) THE GREAT WRITINGS OF EUROPE 1850-1950. (6 credits). An analysis of representative works of modern European literature.
Professor Robinson

* **110-351D (120-320A) ENGLISH LANGUAGE AND PROSE LITERATURE BEFORE THE NORMAN CONQUEST.** (6 credits). An introduction to Old English (Anglo-Saxon) prose language and literature.

110-352A AN INTRODUCTION TO OLD ENGLISH LANGUAGE AND LITERATURE. (3 credits). A study of the language and culture of the Anglo-Saxons through reading of primarily prose texts.
Professor Williams

110-353B (120-321B) ANGLO-SAXON POETRY WITH EMPHASIS ON BEOWULF. (3 credits).
Professor Williams

* **110-356A (120-323A) MIDDLE ENGLISH.** (3 credits). English literature from 1200 to 1500 exclusive of Chaucer.

* **110-357A (120-382A) CHAUCER: CANTERBURY TALES.** (3 credits).

* **110-358B (120-383B) CHAUCER: TROILUS AND CRISEYDE.** (3 credits).

* **110-359B (120-322B) ENGLISH LITERATURE IN THE 14th AND 15TH CENTURIES, Exclusive of Chaucer.** (3 credits). Further study in Middle English language and literature.

110-360D (120-339D) LITERARY CRITICISM. (6 credits). An advanced study of critical methods.
Professor Heuser F661

110-364D (120-246D) CREATIVE WRITING — INTERMEDIATE. (6 credits). Students must have the consent of the instructor.
Professor Blaise

* **110-365D THEATRE LAB.** (6 credits). An exploration of a dramatic text through production. Co-requisite courses are required. For details of texts and current co-requisites students should consult the instructor before registration.

* **110-366D (120-327D) AESTHETIC THEORIES OF DRAMA AND DRAMATIC CRITICISM.** (6 credits). A theoretical study of drama and theatre as forms of human presentation.

110-368D (120-215D) HISTORY OF THE THEATRE II. (6 credits). History of the theatre from the Italian Renaissance to the use of realism.
Professor Ripley Boor

* **110-369D (120-375D) PERIOD AND STYLE IN THE THEATRE.** (6 credits; *Prerequisite:* 260D or the consent of the instructor). A study, through practical participation, of works from major periods in Western theatre.

110-378D CRITICAL APPROACHES TO COMMUNICATIONS STUDY. (6 credits). The development of methods for critical research in the media.
Staff

110-379D (120-349D) THE FILM. (6 credits). An advanced study of the film.
Professor Wees

110-384D (120-341B) STUDIES IN COMMUNICATIONS. (3 credits). A study of special subjects in communications which vary from year to year.
Professor Languirand

110-385D (120-313D) LITERATURE AND FILM. (6 credits). Form and image in Literature and Film.
Professor Wees

110-390D HONOURS TUTORIAL II. (6 credits). Symbolic Analysis.
Professor Gopnik

* **110-394D (120-395D) HONOURS TUTORIAL II — ALTERNATE.** (6 credits). Literary theory and analysis.

110-395A (120-380A) INDIVIDUAL READING COURSE. (3 credits). By arrangement with individual instructor. Permission must be obtained from the department before registration.
Staff

110-396B (120-381B) INDIVIDUAL READING COURSE. (3 credits). By arrangement with individual instructor. Permission must be obtained from the department before registration.
Staff

* **110-398D (120-350A) DEPARTMENTAL SEMINAR.** (6 credits). Subjects of major interest to the study of English, varying from year to year.

400-Level Courses

110-401D (120-484D) THE 17TH CENTURY. (6 credits). Advanced study of the major literary traditions of the 17th century.
Professor Lindeman

* **110-403D (120-494D) THE 18TH CENTURY.** (6 credits).

110-405D (120-274D) THE 19TH CENTURY. (6 credits).
Professor Cole

* **110-407A (120-486A) THE 20TH CENTURY.** (3 credits).

110-408B (120-487B) THE 20TH CENTURY. (3 credits).
Professor Ronsley

110-417A (120-317A) A MAJOR ENGLISH POET. (3 credits). The poet studied varies from year to year.
Professor Heppner

* **110-418D (120-318D) STUDIES IN 20TH CENTURY LITERATURE.** (6 credits). Study of specific subject in 20th century literature, changing from year to year.

* **110-419A (120-319A) STUDIES IN 20TH CENTURY LITERATURE.** (3 credits). Study of specific subject in 20th century literature, changing from year to year.

110-420D (120-305D) STUDIES IN ANGLO-IRISH LITERATURE. (6 credits). Selections from the Irish authors, works and literary movements in the English language.
Professor Ronsley

* **110-421A (120-499A) AFRICAN LITERATURE.** (3 credits).

* **110-422A (120-316D) STUDIES IN 19TH CENTURY AMERICAN LITERATURE.** (6 credits). Major figures and themes.

* **110-423B STUDIES IN 19TH CENTURY AMERICAN LITERATURE.** (3 credits).

110-430B (120-331B) STUDIES IN DRAMA. (3 credits). Specific subjects in drama, changing from year to year.
Professor Suvin

* **110-431D (120-330D) STUDIES IN DRAMA.** (6 credits). Specific subjects in drama, changing from year to year.

* **110-432D STUDIES IN DRAMA.** (6 credits). Specific subjects in drama, changing from year to year.

* **110-433D STUDIES IN DRAMA.** (6 credits). Specific subjects in drama, changing from year to year.

110-435D (120-401D) SATIRE. (6 credits). Origins, techniques and purpose of satire.
Professor Klima

* **110-437B (120-347A) STUDIES IN A LITERARY FORM.** (3 credits). Study of a specific literary form, changing from year to year.

110-438A,B (120-348B) STUDIES IN A LITERARY FORM. (3 credits). Study of a specific literary form, changing from year to year.
Professor Heppner

* **110-439D (120-311A) STUDIES IN SCIENCE FICTION.** (6 credits). The study of science fiction as a literary form.

110-443D CONTEMPORARY WOMEN'S FICTION. (6 credits). The study of representative works of contemporary women's fiction as a specific genre. (Not open to students who have taken 110-295A in 1974-75).
Professor Blaise

110-447D (120-337D) CROSSCURRENTS BETWEEN ENGLISH LITERATURE AND EUROPEAN LITERATURE OF THE 18TH CENTURY. (3 credits; *Prerequisite:* a reading knowledge of French).
Professor Klima

* **110-456A (120-451A) MIDDLE ENGLISH.** (3 credits). Malory's *Morte D'Arthur;* a study of the work and its background.

110-464D (120-346D) CREATIVE WRITING — ADVANCED. (6 credits). Students must have the consent of the instructor. In 1976-77, poetry.
Professor Reichertz

110-465D THEATRE LABORATORY. (6 credits). An exploration of a dramatic text through production. Co-requisite courses are required. For details and current co-requisites, students should consult the instructor before registration.
Staff

* **110-466D (120-376D) THEORY AND PRACTICE OF DRAMATIC PRODUCTION.** (6 credits). Emphasis on directorial skills in the theatre.

* **110-469D (120-475D) DRAMA IN THE THEATRE.** (6 credits). Conditions of performance in various modern modes, with exercises.

110-470D THEATRE FOR CHILDREN. (6 credits). A study of the historical development of children's theatre, as well as its theory and method.
Staff

110-478D DEPARTMENTAL SEMINAR IN COMMUNICATIONS. (6 credits). A required departmental seminar in varying themes in communications for students in their final year of the Communications stream.
Professor Ohlin

* **110-480A (120-302A) STUDIES IN THE HISTORY OF THE FILM I.** (3 credits). Specific subject varies from year to year.

110-481B (120-303B) STUDIES IN THE HISTORY OF THE FILM II. (3 credits). Specific subject varies from year to year.
Professor Ohlin

* **110-482A (120-373B) FILMMAKING.** (3 credits). (Limited enrolment — permission of instructor required). Theory and practice in filmmaking.

* **110-484A,B (120-370B) SEMINAR IN THE FILM.** (3 credits). In-depth study of specific topics related to the film, which vary from year to year.

110-485D (120-301D) MODES OF COMMUNICATION. (6 credits). A study of literature and media.
Professor Languirand

110-486D (120-410D) STUDIES IN THE MASS MEDIA. (6 credits). Theory and practice of the fundamentals of television production.
Professor Karle

110-490D HONOURS TUTORIAL III. (6 credits). Literary history as a means of literary criticism.
Professor Bouchard

* **110-494D (120-495D) HONOURS TUTORIAL III — ALTERNATE.** (6 credits. History of Literary Theory. Criticism and Aesthetics.

110-495A (120-480A) INDIVIDUAL READING COURSE. (3 credits). By arrangement with individual instructor. Permission must be obtained from the department before registration.
Staff

110-496B (120-481B) INDIVIDUAL READING COURSE. (3 credits). By arrangement with individual instructor. Permission must be obtained from the department before registration.
Staff

110-498D (120-351D) DEPARTMENTAL SEMINAR. (6 credits). Subjects of major interest to the study of English varying from year to year.
Professor Mallock

* **110-499A DEPARTMENTAL SEMINAR.** (3 credits).

500-Level Courses.

Advanced study in seminar format of special topics as indicated by course titles. Enrolment is limited to fifteen students. Admission by permission of the instructor.

110-500A (120-451A) MIDDLE ENGLISH. (3 credits).
Professor Puhvel

110-501B (120-452A) 16TH CENTURY. (3 credits).
Professor Lindeman

* **110-502A (120-454A) 17TH CENTURY.** (3 credits).

* **110-503A (120-456A) 18TH CENTURY.** (3 credits).

110-504A (120-457A) 19TH CENTURY. (3 credits).
Professor Rubin

* **110-505B (120-458A) 20TH CENTURY.** (3 credits).

110-516B (120-453A SHAKESPEARE. (3 credits).
Professor Bristol

110-525B (120-461B) AMERICAN LITERATURE. (3 creidts).
Professor Elliott

110-527A (120-463A) CANADIAN LITERATURE. (3 credits). A detailed study of a particular author, genre, period, or special group of Canadian writers.
Professor Cole

110-528B (120-463A) CANADIAN LITERATURE. (3 credits). A detailed study of a particular author, genre, period, or special group of Canadian writers.
Professor Dudek

110-529D INTERDISCIPLINARY SEMINAR IN NORTH AMERICAN STUDIES. (3 credits).

110-530A (120-466A) LITERARY FORMS. (3 credits).
Professor Duer

110-531A (120-468B) LITERARY FORMS. (3 credits).
Professor Weems

110-533B LITERARY MOVEMENTS. (3 credits).
Professor Rubin

* **110-539D THE FOLK BALLAD TRADITION IN GREAT BRITAIN AND NORTH AMERICA.** (6 credits).

110-555B OLD NORSE. (3 credits). An historical and linguistic investigation of Old Norse: Language Acquisition.
Professor Puhvel

110-565D MEDIAEVAL DRAMA WORKSHOP. (6 credits). A study of the intellectual, religious, historical, social, and theatrical context which produced the plays, in order to understand the drama as a product of its own time.
Professors Anderson & Lieblein

110-568A COMMUNICATION AND DRAMA. (3 credits).
Professor Tembeck

110-569B COMMUNICATION AND THEATRE. (3 credits).
Professor Tembeck

* **110-585D MODES OF COMMUNICATION IN MODERN LITERATURE AND MEDIA.** (6 credits).

The following course(s) may be chosen by English Major and Honours students as part of their programs:

135-351A STUDIES IN MODERN JEWISH FICTION. (3 credits).
Professor Lindeman

135-363A THE SHTETL UPROOTED (1881-1924). (3 credits).
Professors Wisse and Orenstein

135-364B THE SHTETL UPROOTED (1924-1929). (3 credits).
Professors Wisse and Orenstein

157-360A QUEBEC AND THE THIRD WORLD. (3 credits).
Professor Dorsinville

FRENCH LANGUAGE CENTRE (127)

Assistant Professor: BARABARA SHEPPARD (Director)
Lecturers: J.Ph. AUBERT; C. FAY-BAULU; J. FLETCHER; M.N. LEGOUX; H. MIGNAULT; I. RIGAL; RIEL SALVATORE; G. SIX

3438 McTavish St
Office: Room 205, Telephone 392-5727
Courses 341D & 401D: 392-4938

The Centre offers French Language courses of a practical nature, for those who will be required to use the language in future, whether in Quebec or elsewhere. Courses are open to students who do not yet feel at ease in the French-speaking community, cannot always follow conversation or lectures delivered in French at normal speed, without concession or simplification, and are unable to communicate their thoughts relatively easily and correctly in French. The Centre aims to bring students to the point where they can readily "function" in the French language. For more advanced courses, as well as courses in French linguistics, stylistics, literature, civilisation, and in translation, see the Department of French Language and Literature.

REGISTRATION

Numbers are limited in all classes; in order to be sure of a place students from all Faculties must register with the Centre during the official registration period and obtain a section ticket. No auditors are permitted in any course. At registration students will be interviewed to determine their level in French. Further tests will be given at the beginning of term to ensure that students are enrolled in an appropriate course.

In a case where we have to refuse admission to a course, either because of over-enrolment or because the student's level in oral or written French is too low or too high, the student will be directed to another course in the Centre or advised to consult the Département de Littérature Française, or the Centre d'Etudes Canadiennes-Françaises.

INTERVIEWS

Students who wish to be interviewed for admission **before** registration, may come for interview at 3438 McTavish, between 1p.m. and 4p.m. on September 1st, 2nd, 3rd, 7th, 8th.

ACCELERATED SEQUENCE OF COURSES.

Students who have achieved very good results in 127-201D or 127-211D may be considered for admission directly to 127-401D.

ATTENDANCE AND GRADES

Students are expected to attend regularly in all courses. Grades are awarded on the basis of term work, regular tests and an oral examination.

COURSE DESCRIPTIONS.

127-201D INTENSIVE BEGINNERS' FRENCH. (6 credits; 6 hours including language laboratory). Open to students in any degree program having no previous knowledge of French. Text: Politzer, Hagiwara, Carduner *L'Echelle* (Xerox Co.) and laboratory workbook.
Staff

127-211D ORAL AND WRITTEN FRENCH I. For students from outside Quebec province. (6 credits; 3 hours, plus language laboratory). Open to students in any degree program having only an elementary knowledge of French. Grammar review, comprehension, vocabulary, conversation.
Staff

127-321D ORAL AND WRITTEN FRENCH II. For students from outside the Province of Quebec. (6 credits; 3 hours, plus language laboratory). For those having taken 127-211D or equivalent. Comprehension, discussion, reading, grammar review.
Staff

Classes in French conversation (341D & 401D):

Please note the following:

1) It is impossible in any language course, in only a few class meetings per week, to offer sufficient oral practice. Our aim is to provide students with the means and the confidence to practise their French outside class. Students are advised to take full advantage of all the opportunities offered by the Quebec milieu (contacts with French-speaking persons, at work and in leisure, theatre, the written word, etc.) and are required to work on projects demonstrating their activities in this field.
2) Regular written work (brief résumés) is required, always with a view to reinforcing what has been learned orally. Frequent short tests will be given.
3) Any student who enrols must be prepared to take an active part in class meetings; this involves participation and leadership in discussions as well as organization of the program.
4) Students who have taken 341D may not enrol in 401D. Graduate Students will be admitted by special permission only and where numbers allow.
5) Attendance is compulsory.

127-341D FRANÇAIS FONCTIONNEL INTERMEDIAIRE. Destiné en principe aux étudiants ayant fait leurs études secondaires au Québec et en priorité aux étudiants de U.3. (6 crédits, 3 heures par semaine). 16 étudiants par section. Utilisation du français oral par le biais de discussions, de films, de disques, etc. . . . Révision systématique de problèmes de grammaire non résolus et de structures de langue mal assimilées.
Professeur Rigal.

127-401D FRANÇAIS FONCTIONNEL. (6 crédits; 5 heures par semaine). Destiné aux étudiants d'U3. Cours intensif centré sur la langue parlée; groupes de 8 étudiants. Permet à ceux qui ont déjà les con-

naissances de base du français d'améliorer leur compréhension et leur expression par la pratique.
Professeur Mignault.

FRENCH LANGUAGE AND LITERATURE (125) (FORMERLY 126)

Professors — G.P. COLLET*(on leave first term)* J. ETHIER-BLAIS (on leave); J.L. LAUNAY
Associate Professors — M. ANGENOT; M.T. CARTWRIGHT; Y. CHAMPIGNEUL; G. D. STEFANO *(on leave second term);* J.P. DUQUETTE; F. FURLAN *(on leave second term);* H. JONES; R.G. McGILLIVRAY; J.C. MORISOT; M. RABOTIN; F. RICARD; D.W. STEEDMAN *(on leave);* J. TERRASSE; L. van DELFT; R. VIGNEAULT
Assistant Professors — J.P. BOUCHER *(on leave);* I. CREMONA; J.C. LEMYZE; A. MAUGEY; G. PASCAL *(on leave);* Y. RIVARD; A. SMITH *(on leave);* I. STAROSTA; A. TICHOUX
Sessional Lecturer — A. JULIEN

Peterson Hall
3460, rue McTavish
Montréal H3A 1X9

Secrétariat Général — Tél.: 392-4591 ou 4577 ou 3003
Etudes sous-graduées — 126 Peterson Hall. Tél.: 392-4670 ou 4671

GÉNÉRALITIÉS

Le département de français offre un programme de cours qui couvre l'ensemble des littératures française et québécoise. D'autres aspects des études françaises ne sont pas négligés: aussi trouvera-t-on des cours de cinéma, de civilisation, et surtout de langue (linguistique, stylistique, traduction).

Le français est la seule "langue de travail" à l'intérieur du département. Les francophones constituent une proportion importante de nos étudiants, ce qui représente un avantage appréciable pour les étudiants qui ne sont pas de langue française, leur permettant de faire leurs études dans un milieu essentiellement français.

Notre programme de cours a été remanié et un certain nombre de nouveaux cours introduits. On trouvera plus loin le détail de nos cours et les séquences conduisant à nos diplômes "Honneurs", "Honneurs-Conjoints", "Majeur". Ces cours ont été renumérotés d'une façon assez notable. L'ancien numéro figure entre parenthèses, toutes les fois qu'il y a lieu.

N.B. IL N'EST PAS PERMIS DE SUIVRE, SOUS SON NOUVEAU NUMERO, UN COURS DEJA SUIVI.

L'admission aux cours pratiques de langue (200D, 201D, 400A, B, 240D, 241D, 242D) dépend d'un *examen d'entrée obligatoire* dont les dates seront communiquées au moment des inscriptions. L'examen a pour but de déterminer le niveau de connaissance de l'étudiant et d'assurer qu'il soit affecté à une classe correspondant à ses besoins. Si la préparation de l'étudiant s'avère insuffisante un cours au *Centre de Langue Française (q.v.) lui sera conseillé.*

La plupart des cours peuvent être suivis par n'importe quel étudiant ayant les connaissances et les capacités voulues; le professeur chargé du cours jugera en dernier ressort. Certains cours toutefois sont réservés aux étudiants du département: ce sont ceux dont le deuxième chiffre —9— indique qu'ils sont des séminaires destinés à nos étudiants Honneurs. Les cours 500 peuvent être suivis par des étudiants sous-gradués ou gradués, avec assentiment du professeur.

LE PROGRAMME HONNEURS (60 CREDITS) ET HONNEURS-CONJOINTS (36 CREDITS)

Honneurs et Honneurs-Conjoints peuvent être faits en littérature française ou en littérature québécoise. Pour être admis, il faut, d'ordinaire, avoir fait la concentration "Français" au CEGEP et avoir obtenu des résultats bien supérieurs à la moyenne. Les étudiants anglophones, et les étudiants venus d'autres provinces ou d'autres pays, doivent faire preuve d'une préparation adéquate. Une note de 65% au moins est exigée dans chaque cours de français.

Les Honneurs Conjoints sont autorisés avec les départements suivants: Allemand, Anglais, Espagnol, Italien, Langues Anciennes, Philosophie, Russe.

L'obtention d'un baccalauréat Honneurs ou Honneurs-Conjoints est obligatoire pour l'admission en Maîtrise.

LE PROGRAMME MAJEUR (54 CREDITS)

Le programme Majeur peut être suivi en littérature française, en littérature québécoise, ou en linguistique française.

Honneurs: Option Littérature française (60 crédits)

U1: 290D; 291D; 240D ou 241D ou 242D
U2: 390D
U3: 6 crédits choisis dans 490A, 491A, 492B plus 30 crédits en U2 et U3

Honneurs: Option Littérature québécoise (60 crédits)

U1: 290D, 291D, 240D ou 241D ou 242D
U2: 390D
U3: 6 crédits choisis dans 490A, 495A, 496B plus 30 crédits en U2 et U3.

Honneurs-Conjoints: Option littérature française ou littérature québécoise (au moins 36 crédits).

U1: 290D; 291D
U2: 240D ou 241D ou 242D plus 6 crédits
U3: 12 crédits dont au moins 3 de séminaire

Majeur: Option Littérature française ou littérature québécoise (54 crédits)

U1: 290D; 291D; 240D ou 241D ou 242D
36 crédits en U2 et U3
328D recommandé en U1 ou U2 (Option littérature québécoise)

Majeur: Option linguistique française (54 crédits)

U1: Linguistics 200A (voir Dept. of Linguistics)
230B; 235D ou 6 crédits en français; 240D ou 241D ou 242D
U2: 330D; 332A; 333A
345D ou 6 crédits en français
U3: 12 crédits choisis dans 434B, 435B; 445D; 510D, 520D, plus 6 crédits en français

N.B. 6 crédits en Majeur peuvent être choisis dans une discipline connexe.

REMARQUES DIVERSES

Un étudiant peut être dispensé du cours de composition (240D, 241D, 242D) selon le résultat de l'examen d'entrée.

Tout étudiant qui choisit l'option littérature française (Honneurs ou Majeur) doit suivre des cours dans différentes périodes et dans différents genres.

Le cours 249A,B est recommandé aux étudiants non-francophones.

Le fait de choisir l'option littérature française n'empêche pas un étudiant de suivre un nombre raisonnable de cours en littérature québécoise, et vice versa.

Tout étudiant Honneurs doit suivre au moins 6 crédits par année hors du département.

Les étudiants déjà inscrits en "Langue et civilisation françaises" seront tenus de poursuivre cette option.

NUMEROTATION DES COURS

Les anciennes séquences de cours divisés en Honneurs et Majeur ne sont plus maintenues. Elles sont remplacées par un *tronc commun* en 1ère année pour tous les étudiants en littérature frainçaise et québécoise, suivi d'une séquence de *séminaires* réservés. Les éléments de *linguistique française* seront inculqués à tous les étudiants, quelle que soit leur option.

Le deuxième chiffre indique la nature du cours, comme suit:

0 Cours destinés principalement ou exclusivement aux étudiants extérieurs au département.
1-2 Cours auxiliaires (1: cinéma
2: civilisation)
3-4 Cours de langue (3: cours théoriques; 4: cours pratiques)
5-6 Littérature française
7-8 Littérature québécoise
9 Cours réservés et Séminaires

COURS DIVERS

125-200D COMPOSITION I (126-220A,B). (6 crédits; *Prérequis:* examen d'entrée). Révision systématique de la grammaire française; acquisition de vocabulaire; traductions et compositions élémentaires.

125-201D COMPOSITION II (126-222D). (6 crédits; *Prérequis:* examen d'entrrée). Cours analogue au cours précédent, pour étudiants plus avancés.

Note: Il n'est pas permis de suivre successivement les cours 200D et 201D. L'étudiant qui, ayant passé l'un ou l'autre cours, est désireux de suivre un cours de composition plus avancé, passera au cours 240D.

125-202D INTRODUCTION A LA LITTERATURE FRANÇAISE (126-215D). (6 crédits). Une initiaton à la littérature française par une étude des principaux textes.
Professeur Cartwright

125-203D THEATRE EN ACTION (126-219D). (6 crédits). Ce cours s'adresse plus particulièrement aux étudiants non-francophones qui désirent perfectionner leur français parlé en montant et en interprétant une ou plusieurs pièces modernes.

125-204A CIVILISATION QUEBECOISE I (126-210A). (3 crédits). Introduction à la civilisation québécoise (de 1800 à 1945). A l'aide d'oeuvres littéraires et artistiques, introduction aux différents aspects de la société québécoise.

125-205B CIVILISATION QUEBECOISE II (126-211B). (3 crédits). Introduction à la civilisation cuébécoise (depuis 1945). Suite du cours précédent.

125-208A LITTERATURE QUEBECOISE CONTEMPORAINE 1 (1945-1960) (126-208A). (3 crédits. (Ne sera pas donné en 1976-77). Introduction à la littérature québécoise d'après-guerre.

125-209B LITTERATURE QUEBECOISE CONTEMPORAINE II (1960 À NOS JOURS) (126-204B) (3 crédits. Ne sera pas donné en 1976-77.) Suite du cours précédent.

125-220A LA FRANCE D'AUJOURD'HUI (DEPUIS 1945) 1. (126-441D). (3 credits. Ne sera pas donné en 1976-77). Divers aspects de la France contemporaine: son évolution sociale et politique, la France et le Marché Commun, le monde du travail, l'enseignement, l'information, la vie culturelle.

125-221B LA FRANCE D'AUJOURD'HUI (DEPUIS 1945) II. (126-441D) (3 crédits; Prérequis: 125-220A ou permission du professeur. Ne sera pas donné en 1976-77). Suite du cours précédent.

125-230B INTRODUCTION A LA LINGUISTIQUE FRANÇAISE. (3 crédits; *Prérequis:* Linguistics 104-200A. Prérequis aux cours 330D, 332A, 333A, 434B, 435B). Survol de la linguistique française de F. de Saussure à nos jours. Description linguistique

du français moderne (éléments de phonologie, de phonétique normative, de syntaxe et de morphologie).
Professeur Angenot

125-235D EVOLUTION ET STRUCTURES DE LA LANGUE FRANÇAISE. (126-342D) (6 crédits). Histoire de la langue française, du bas-latin à la langue moderne. Etude de l'évolution phonétique, syntaxique, sémantique. Etude de textes des différentes époques.
Professeur Rabotin

125-240D COMPOSITION III. (6 crédits; *Prérequis:* examen d'entrée). Enrichissement de la langue; délimitation des faits d'expression; étude systématique des ressources expressives de la langue. Rédactions.

125-241D COMPOSITION IV. (6 crédits; *Prérequis:* examen d'entrée). Cours analogue au cours précédent, pour étudiants plus avancés.

125-242D COMPOSITION V. (6 crédits: *Prérequis:* examen d'entrée). Cours analogue au cours précédent, pour étudiants plus avancés. Initiation à la stylistique du français: éléments intellectuels et affectifs, niveaux de langage. Rédactions.

Note: Il n'est pas permis de suivre successivement les cours 240D, 241D, 242D. Un seul de ces cours peut être compté.

125-249A,B PHONETIQUE CORRECTIVE. (3 crédits). Destiné aux non-francophones, ce cours a pour but d'améliorer leur prononciation. Etude systématique des phonèmes du français et de leur production. Rythme et intonation de la phrase. Recommandé aux étudiants non-francophones inscrits au département de français. D'autres étudiants seront admis selon la disponibilité des places.
Professeur Lemyze

125-290D HISTOIRE DE LA LITTERATURE FRANÇAISE ET QUEBECOISE. (6 crédits). Séminaire obligatoire pour tous les étudiants en littérature française ou québécoise. Il a pour but d'assurer que nos étudiants, de provenance diverse, possèdent les connaissances de base essentielles pour poursuivre des études plus avancées.

125-291D TRAVAUX PRATIQUES. (6 crédits). A prendre conjointement avec le 125-290D. Etude détaillée des textes au programme. Initiation à la linguistique française.

125-310A HISTOIRE DU CINEMA FRANÇAIS I (126-235D). (3 crédits). Rétrospective du cinéma français depuis ses origines jusqu'à la deuxième Guerre Mondiale.
Professeur Maugey

125-311B HISTOIRE DU CINEMA FRANÇAIS II. (126-235D). (3 crédits; Prérequis: 125-310A ou permission du professeur). Suite du cours précédent: le cinéma français d'après-guerre.
Professeur Maugey

125-315A,B LE CINEMA QUEBECOIS. (126-334A,B) (3 crédits). Etude thématique du cinéma québécois à travers ses principaux films. Les approches seront: poétique, sociologique, psychologique et politique.
M. Julien

125-320A CIVILISATION FRANÇAISE DU MOYEN AGE ET DE LA RENAISSANCE (126-241D). (3 crédits). Ce cours a pour but de faire connaître, au moyen de documents divers (livres, diapositives, etc.) le milieu humain dans lequel la littérature française s'est développée entre 1100 et 1600.
Professeur Tichoux

125-321B CIVILISATION FRANÇAISE: L'ANCIEN REGIME. (126-241D). (3 crédits). Ce cours a pour but de faire connaître, au moyen de documents divers (livres, diapositives, etc.) le milieu humain dans lequel la littérature française s'est développée depuis Henri IV jusqu'à la Révolution.
Professeur Tichoux

125-328D HISTOIRE DE LA CIVILISATION QUEBECOISE. (126-264D). (6 crédits Fermé aux étudiants inscrit en 204A, 205B). Etude des différents secteurs de la société québécoise (économique, politique, social, culturel). Analyse sociologique d'oeuvres littéraires et artistiques. Recommandé aux étudiants du département qui choisissent l'option "littérature québécoise".

125-330D STYLISTIQUE FRANÇAISE (126-400D) (6 crédits; *Prérequis:* 125-230B). Méthodologie de l'analyse linguistique des textes littéraires. Théorie de figures et de tropes. Rhétorique. Prosodie. Introduction à la théorie des genres littéraires, à la sémiotique et à l'analyse du discours.
Professeur Angenot

125-332A SYNTAXE ET MORPHOLOGIE. (3 crédits; *Prérequis:* 125-230B). Problèmes particuliers de syntaxe et de morphologie; historique et descriptive, du français. Introduction à la grammaire transformationnelle et générative.

125-333A SEMANTIQUE ET LEXICOLOGIE. (3 crédits; *Prérequis:* 125-230B). Théories contemporaines de sémantique et de lexicologie. Notions de lexicographie. Changements sémantiques. Idiotismes. Néologismes, etc.

125-345D STYLISTIQUE COMPAREE DE L'ANGLAIS ET DU FRANÇAIS. TRADUCTION I. (126-245D; 126-247D) (6 crédits). Initiation aux principes de la traduction par une étude systématique des contrastes entre les structures linguistiques de l'anglais et du français. Une **bonne** connaissance des deux langues est supposée au départ. Inscriptions limitées, suivant un examen d'entrée le premier jour du cours.
Professeur Tichoux

125-350A LITTERATURE FRANÇAISE DU XXe SIECLE I. (126-223A) (3 crédits). Introduction à la littérature française moderne par une étude de quelques oeuvres parmi les plus marquantes.
Professeur Maugey

125-351B LITTERATURE FRANÇAISE DU XXe SIECLE II. (126-224B) (3 crédits, *Prérequis:* 125-350A ou permission du professeur). Introduction à la littérature française contemporaine par une étude de quelques oeuvres parmi les plus marquantes.
Professeur Maugey

125-355D LE ROMAN DE PROUST A CAMUS (126-312D. -357D) (6 crédits). Le roman en France depuis le début du XXe siècle jusqu'à la deuxième Guerre Mondiale.
Professeur Duquette

125-356A REALISME ET NATURALISME I. (126-330A, -363D) (3 crédits). De Stendhal à Flaubert: naissance de l'esthétique réaliste, thèmes et structures romanesques.
Professeur Jones

125-357B REALISME ET NATURALISME II. (126-331B, -363D) (3 crédits; *Prérequis:* 125-356A ou permission du professeur). De Fromentin à Maupassant: évolution de la vision réaliste; thèmes et structures romanesques.
Professeur Jones

125-358D LE ROMAN DEPUIS SARTRE. (126-225D, -275D) (6 crédits. Ne sera pas donné en 1976-77). Le roman d'après-guerre; le "nouveau roman". Techniques de composition; relations entre l'univers imaginaire des romanciers et leur époque.
Professeur Smith

125-360D LE ROMANTISME (126-251A, -252B, 231D). (6 crédits). Différents visages du romantisme français: ses origines (influence des littératures étrangères), la "bataille romantique". Développement d'une sensibilité et d'une thématique nouvelles.
Professeur Starosta

125-361D LA LITTERATURE DE LA RENAISSANCE (126-356D). (6 crédits). Panorama de la littérature française de Marot à Montaigne.
Professeur Cremona

125-362A LA LITTERATURE DU XVIIe SIECLE I. (126-236A) (3 crédits). La littérature de l'âge baroque en France.
Professeur Champigneul

125-363B LA LITTERATURE DU XVIIe SIECLE II (126-237B). (3 crédits; *Prérequis:* 125-362A ou permission du professeur). La littérature de l'époque classique.
Professeur Champigneul

125-364A LA LITTERATURE DU XVIIIe SIECLE I (126-336A). (3 crédits). Introduction aux grands courants d'idées du siècle. Evolution de la sensibilité dans le roman et le théâtre; mouvement philosophique.
Professeur Furlan

125-365B LA LITTERATURE DU XVIIIe SIECLE II (126-337B). (3 crédits; *Prérequis:* 125-364A ou permission du professeur). Etude des courants d'idées et du développement de la sensibilité en France après 1750.
Professeur Cartwright

125-366A LITTERATURE ET SOCIETE. LE ROMAN AU XVIIIe SIECLE I (126-262D) (3 crédits. Ne sera pas donné en 1976-77). L'évolution du genre romanesque au dix-huitième siècle étudié dans ses rapports avec les moeurs et avec la société de l'époque.

125-367B LITTERATURE ET SOCIETE. LE ROMAN AU XVIIIe SIECLE II (126-262D) (3 crédits; *Prérequis:* 125-366A ou permission du professeur. Ne sera pas donné en 1976-77). Suite du cours précédent.
Professeur Terrasse

125-368B. LITTERATURE NOIRE D'EXPRESSION FRANCAISE (126-238D). (3 crédits). Origine particulière de la littérature antillaise et africaine. Ce cours portera sur le mouvement de la négritude et sur ses chantres.
Professeur Maugey

125-370A LA LITTERATURE QUEBECOISE JUSQU'EN 1940 (126-227A, -229D). (3 crédits). Ce cours proposera l'étude des oeuvres les plus significatives de la littérature québécoise afin d'en dégager les principales tendances depuis François-Xavier Garneau (1840) jusqu'à Saint-Denys Garneau (1940)
Professeur Rivard

125-371B LA LITTERATURE QUEBECOISE DEPUIS 1940 (126-228B, -229D). (3 crédits; Prérequis: 125-370A ou permission du professeur). Ce cours proposera l'étude des oeuvres les plus significatives de la littérature québécoise afin d'en dégager les principales tendances, depuis Alain Grandbois (1940) jusqu'à nos jours.
Professeur Rivard

125-372D ROMAN QUEBECOIS JUSQU'EN 1945 (126-361D). (6 crédits). Naissance du roman d'aventure et du récit fantastique; étude de moeurs et romans de la terre, évolution du roman paysan.
Professeur Duquette

125-373B ROMAN QUEBECOIS (1945-1960) (126-461D). (3 crédits). La Seconde Guerre Mondiale: éclatement des valeurs traditionnelles. Découverte de la modernité et recherche de nouvelles formes. L'étude portera sur quelques oeuvres majeures de cette période.
Professeur Duquette

125-375D THEATRE QUEBECOIS (126-333D) (6 Crédits. Ne sera pas donné en 1976-77). Introduction à la littérature québécoise d'après-guerre.
Professeur Smith

125-377A LA CRITIQUE LITTERAIRE QUEBECOIS . (3 crédits). Histoire des doctrines littéraires et de la pensée critique au Québec depuis 1860. Problèmes principaux: existence de la littérature québécoise, rapports avec l'étranger, etc. Tendances de la critique actuelle universitaire et journalistique. Etude de quelques textes majeurs.
Professeur Rivard

125-378A LE CONTE QUEBECOIS. (3 crédits). La tradition orale: contes et légendes traditionnels. Passage de l'oral à l'écrit. Développement du conte littéraire depuis la fin du 19e siècle jusqu'à nos jours. Etude des principaux thèmes, des principales formes, et de quelques oeuvres majeures.
Professeur Ricard

125-382D ROMAN QUEBECOIS DEPUIS 1960 (126-329D. -461D). (6 crédits). Evolution de la technique romanesque au Québec depuis 1960. Analyse formelle de plusieurs romans contemporains choisis parmi les auteurs les plus connus (Godbout, Ferron, Aquin, Bessette...)
Professeur Ricard

125-390D HISTOIRE DES THEORIES LITTERAIRES DE LA RENAISSANCE A NOS JOURS (126-422D). (6 crédits). La réflexion littéraire (doctrine critique) depuis ses débuts au XVIe siècle jusqu'à l'époque contemporaine.
Professeur Terrasse

125-400A,B FRANÇAIS COMMERCIAL (126-205D). (3 crédits; *Prérequis:* examen d'entrée). Réservé aux étudiants inscrits en dernière année à la Faculté de Commerce, ce cours porte sur le français des affaires. Exercices oraux et écrits: acquisition de vocabulaire, terminologie commerciale, rédaction de lettres et de rapports, etc.

125-405A,B FRANÇAIS ECRIT. (3 crédits; *Prérequis:* examen d'entrée. Consulter la Faculté des Sciences de l'Education). Réservé aux professeurs de primaire ou de secondaire en recyclage, détachés selon les critères établis par le Ministère de l'Education et inscrits à la Faculté des Sciences de l'Education.
Professeur Rabotin

125-410B LITTERATURE ET CINEMA: DU ROMAN A L'ECRAN (126-235D). (3 crédits). Transposition cinématographique de quelques oeuvres littéraires. Les étudiants prépareront à l'intérieur de groupes de travail un projet d'adaptation de roman ou de pièce de théâtre à l'écran.
M. Julien

125-420A CIVILISATION FRANÇAISE: DE LA REVOLUTION A LA COMMUNE (126-341D). (3 crédits). La civilisation française (vie politique, sociale, artistique) de 1789 à 1870.
Professeur Launay

125-421B REPUBLIQUE ET DEMOCRATIE EN FRANCE: 1870-1940 (126-341D). (3 crédits). Ce cours se propose de faire la synthèse de l'histoire politique, économique, sociale et culturelle depuis la chute du Second Empire jusqu'à la deuxième Guerre Mondiale.
Professeur Launay

125-434B PROBLEMES DE SOCIOLINGUISTIQUE DE FRANÇAIS. (3 crédits; Prérequis: 125-230B). Eléments de sociolinguistique et leur application aux pays francophones. Rapports entre les aspects phonologiques, grammaticaux et lexicologiques du parler et le milieu social. Dialectologie et argots.

125-435B PROBLEMES DE LINGUISTIQUE DU FRANÇAIS MODERNE. (3 crédits; Prérequis: 125-230B). Séminaire portant sur des problèmes généraux de la linguistique française. Le sujet précis varie d'année en année (psycholinguistique, lexicographie, linguistique normative, etc.)

125-445D PROBLEMES DE TRADUCTION: TRADUCTION II. (126-445D). (6 credits; *Prérequis:* 126-345D ou permission du professeur). Ce cours portera, avec un minimum d'appareil théorique, sur les problèmes que pose la traduction, particulièrement dans le domaine littéraire. Inscriptions limitées, suivant un examen d'entrée le premier jour du cours.
Professeur Cartwright

125-450D LA POESIE DE BAUDELAIRE A APOLLINAIRE (125-451B). (6 crédits). Ne sera pas donné en 1976-77. La poésie en France au lendemain du romantisme. Symbolisme et Parnasse. Débuts de la poésie contemporaine.
Professeur Morisot

125-452A LE SURREALISME (126-415B). (3 crédits. Ne sera pas donné en 1976-77. Les grands précurseurs du surréalisme seront rappelés: Sade, Lautréamont, Rimbaud, Jarry, le Dadaisme; naissance de l'anti-littérature et de l'anti-art. Formation de l'école surréaliste; importance accordée à l'art; rapports avec la psychanalyse; aspects mystique et politique du mouvement.
Professeur Jones

125-453A LA POESIE CONTEMPORAINE (126-317A). (3 crédits). Les principaux courants de la poésie en France depuis Apollinaire.
Professeur Jones

125-454A LE THEATRE AU XXe SIECLE (126-367D). (3 crédits. Ne sera pas donné en 1976-77). Etude de pièces contemporaines s'opposant à la tradition réaliste et présentant des analogies avec les mouvements poétiques et artistiques de l'époque: expressionnisme, cubisme, surréalisme. Théâtre de l'absurde et théâtre de la cruauté.
Professeur Jones

125-455D INTRODUCTION A LA LANGUE ET A LA LITTERATURE MEDIEVALES, (126-455D). (6 crédits). Survol de la production littéraire médiévale et du système de l'ancienne langue. Les divers genres littéraires seront abordés (conte, roman, théâtre, poésie).
Professeur McGillivray

125-458D LA LITTERATURE FANTASTIQUE (126-458D). (6 crédits). Thèmes, techniques de la littérature fantastique depuis le début du XIXe siècle. Les littératures étrangères ne seront pas négligées.
Professeur Starosta

125-460A LE THEATRE AUX XVIIe ET XVIIIe SIECLES I (126-324A). (3 crédits). Le théâtre de l'âge baroque; les origines du théâtre moderne; dramaturgie classique.
Professeur van Delft

125-461B LE THEATRE AUX XVIIe ET XVIIIe SIECLES II. (126-235B). (3 crédits; Prérequis: 460A ou permission du professeur). Le théâtre classique. Le théâtre satirique du XVIIIe siècle.
Professeur van Delft

125-462D HISTOIRE DE LA PENSÉE FRANÇAISE DEPUIS LA REVOLUTION. (6 crédits). *Ne sera pas donné en 1976-77.* Le mouvement des idées en France au 19e et au 20e siècles. Littérature, politique, idéologies.

125-468D PROBLEMES LITTERAIRES (126-447D).
(6 crédits). *Ne sera pas donné en 1976-77.* Ce cours, dont le sujet varie d'une année à l'autre, permet de traiter certaines questions littéraires dont la nature échappe au découpage traditionnel des programmes. Pour de plus amples détails, s'adresser à la direction des études sous-graduées.

125-470A POESIE QUEBECOISE DE CREMAZIE A SAINT-DENYS-GARNEAU (1850-1940) (126-364D). (3 crédits). *Ne sera pas donné en 1976-77.* Naissance et développement de la poésie québécoise jusqu'à la Seconde Guerre Mondiale. Rapports entre poésie et société. Influences subies. La querelle du régionalisme. Étude d'oeuvres marquantes.
Professeur Vigneault

125-471B POESIE QUEBECOIS D'ALAIN GRANDBOIS A NOS JOURS (DEPUIS 1940) (126-432D). (3 crédits). *Ne sera pas donné en 1976-77. Prérequis:* 125-470A. De l'introspection au surréalisme et l'automatisme (Alain Grandbois, Paul-Marie Lapointe, Ronald Giguère, Gilles Hénault et Claude Gauvreau) en passant par les mouvements divers, tels que ceux de l'Hexagone, de Liberté, de Parti-pris (Paul Chamberland) et de La Barre du Jour. Différentes approches seront utilisées pour l'étude des oeuvres. Nous réserverons une place importante à *L'homme rapaillé*.
Professeur Vigneault

125-485A ESSAI QUEBECOIS AVANT 1960. (126-436D). (3 crédits. Ne sera pas donné en 1976-77). Littérature et idéologie au Québec depuis le 19e siècle. La question nationale. Principaux mouvements d'idées.Étude de l'oeuvre de quelques essayistes importants.
Professeur Rivard

125-486B ESSAI QUEBECOIS DEPUIS 1960. (126-462D). (3 crédits; *Prérequis:* 125-485A ou permission du professeur. Ne sera pas donné en 1976-77). Littérature et idéologie au Québec depuis les débuts de la "Révolution tranquille". Principaux mouvements d'idées. Étude de l'oeuvre de quelques essayistes importants.
Professeur Rivard

125-490A TENDANCE CONTEMPORAINE DE LA CRITIQUE LITTERAIRE (126-390D). (3 crédits). Ce cours vise à mettre en lumière les tendances principales de la critique depuis Bachelard: phénoménologie, existentialisme, psychocritique, thématique, sociologie, structuralisme. Le travail sera centré sur l'étude approfondie de quelques oeuvres critiques particulièrement significatives.
Professeur Angenot

125-491A SEMINAIRE SPECIALISE DE LITTERATURE FRANÇAISE I (126-491B). (3 crédits). Étude approfondie d'un mouvement ou d'une période dans la littérature française (genre, thème, etc.)
Professeur Morisot

125-492B SEMINAIRE SPECIALISE DE LITTERATURE FRANÇAISE II (3 crédits). Étude approfondie d'un sujet précis et limité.
Professeur Collet

125-495A SEMINAIRE SPECIALISE DE LITTERATURE QUEBECOIS I (126-492A). (3 crédits. Ne sera pas donné en 1976-77). Étude approfondie d'un mouvement ou d'une période dans la littérature québécoise (Genre, thème, etc.)

125-496B SEMINAIRE SPECIALISE DE LITTERATURE QUEBECOIS II (3 crédits). Etude approfondie d'un sujet précis et limité.

125-510D TRADUCTION LITTÉRAIRE (125-610D). (6 crédits). Sans négliger les problèmes théoriques, ce cours se propose essentiellement l'étude des problèmes méthodologiques et pratiques que pose la transposition en français de qualité d'un texte originellement rédigé en anglais litteraire. Il exige une certaine maîtrise de la syntaxe de ces deux langues, mais non une connaissance approfondie de leur lexique. Des travaux pratiques hebdomadaires couvriront systématiquement le champ des difficultés courantes, calques, interférences; faux amis, etc. Textes à traduire et bibliographies seront remis au début du cours.
Professeur Launay

125-520D EVOLUTION DE LA LANGUE FRANÇAISE AU CANADA (126-442D). (6 crédits; *Prérequis:* 125-235D ou permission du professeur). Le franco-canadien (ou franco-québécois) à partir de 1760. Étude des rapports entre l'évolution de la société et l'évolution de la langue. Le cours est conçu pour donner aux étudiants l'occasion d'effectuer des recherches personnelles.
Professeur Rabotin

125-550A LECTURES GUIDEES I. (3 crédits). Lectures personnelles ayant pour but de permettre à l'étudiant de combler une lacune ou de satisfaire un intérêt personnel. Admission sur autorisation spéciale.

125-551B LECTURES GUIDES II. (3 crédits). Lectures personnelles ayant pour but de permettre à l'étudiant de combler une lacune ou de satisfaire un intérêt personnel. Admission sur autorisation spéciale.

TABLEAU RECAPITULATIF

(Les cours précédés d'un * ne seront pas offerts en 1976-77).

Cours Divers

200D Composition I

201D Composition II

202D Introduction à la littérature française

203D Théâtre en action

204A-205B Civilisation québécoise

* **208A, 209B Littérature québécoise contemporaine**

400A-B Français commercial

405A-B Français écrit

Cinema et Civilisation

Cinéma

310A-311B Histoire du cinéma français

315A-B Le cinéma québécois

410B Littérature et cinéma du roman à l'écran

Civilisation Française

* **220A-221B La France d'aujourd'hui (depuis 1945)**

320A-321B Moyen Age, Renaissance, Ancien Régime

420A-421B De la révolution à la commune — République et démocratie en France

Civilisation Québécoise

328D Histoire de la civilisation québécoise

Langue

230B Introduction à la linguistique française

235D Evolution et structures de la langue française

240D Composition III

241D Composition IV

242D Composition V

249A,B Phonétique corrective

330D Stylistique française

332A Syntaxe et Morphologie

333A Semantique et lexicologie

345D Stylistique comparée de l'anglais et du français

434B Problèmes de sociolinguistique du français

435B Problèmes de linguistique du français moderne

445D Problèmes de traduction

Littérature française

350A-351B Littérature française du XXe siècle

355D Le roman de Proust à Camus

356A-357B Réalisme et naturalisme

* **358D Le roman depuis Sartre**

360D Le romantisme

361D La littérature de la renaissance

362A-363B La littérature du XVIIe siècle

364A-365B La littérature du SVIIIe siècle

* **366A-367B Littérature et société. Le roman au XVIIIe siècle**

368B Littérature noire d'expression française

* **450D La poésie de Baudelaire à Apollinaire**

* **452A Le surréalisme**

453A La poésie contemporaine

* **454A Le théâtre au XXe siècle**

455D Introduction à la langue et à la littérature médiévales

458D La littérature fantastique

460A-461B Le théâtre aux XVII et XVIIIe siècles

* **462D Histoire de la pensée française depuis la révolution**

* **468D Problèmes littéraires**

Littérature Québécoise

370A-371B La littérature québécoise jusqu'en 1940 et depuis 1940

372D Roman québécois jusqu'en 1945

373B Roman québécois (1945-1960)

375D Théâtre québécois

377A La critique littéraire québécoise

378A Le conte québécois

382D Roman québécois depuis 1960

* **470A, 470B Poésie québécoise de Crémazie à nos jours.**

* **485A, 486B Essai québécois avant et depuis 1960**

Séminaires: réservés aux étudiants Honneurs

290D Histoire de la littérature française et québécoise

291D Travaux pratiques

390D Histoire des théories littéraires de la renaissance à la fin du XIXe siècle

490A Tendance contemporaine de la critique littéraire

491A Séminaire spécialisé de littérature française

492B Séminaire spécialisé de littérature française

* **495A Séminaire spécialisé de littérature québécoise**

496B Séminaire spécialisé de littérature québécoise

Cours ouverts aux étudiants sous-gradués et gradués

N.B. L'admission aux cours suivants est sujette à l'autorisation du professeur

510D Traduction littéraire

520D Evolution de la langue française au Canada

550A, 551B Lectures guidées

GEOGRAPHY (183)

Burnside Hall
Dept. Chairman: Room 510, Phone 392-5489
General Inquiries: Room 513, Phone 392-5700

The Geography Department offers degrees in both the Faculty of Arts and the Faculty of Science. For a full description of the courses and for an outline of the nature of Geography and the opportunities for study in this discipline, the student should consult the listings under Geography in the Faculty of Science section of the announcement (page 161).

B.A. students planning to take an Honours or a Major in Geography should arrange an interview with the departmental chairman or his representative at least one week before registration.

PREREQUISITES

There are no prerequisites in geography for entrance to the Major or Honours B.A. or B.Sc. in Geography. Arts students should include six credits of Mathematics in their CEGEP or pre-university programs. Students who have completed college or pre-university Geography courses fully equivalent to those of First year university may substitute other approved courses as part of the Major or Honours programs.

INTRODUCTORY COURSES

Students intending to continue in human geography may find Geography 110A and 112B useful in addition to those courses specified in the Honours and Major programs.

Students intending to continue in physical geography should enrol in Geography 183-203D. Those students who have not taken physical geography or earth sciences at the Collegial level, and those students who do not intend to continue further in physical geography are recommended to take Geography 183-113B (a treatment of physical geography at the global scale).

Students seeking an overview of world geographic problems, and not necessarily wishing to continue in geography, are recommended to take Geography 183-110A, 112B and/or 113B.

B.A. MAJOR IN GEOGRAPHY

General inquiries: Room 513, Burnside Hall, 392-5700
Advisers:
Professor S. Olson, Room 620, 392-8245 Professor E. Waddell, Room 414, 392-4718.

36 approved credits in Geography, 18 approved credits in related subjects from the Social Sciences. The Geography courses must include: Geography 183-201B, 202B, 214A, 216A, 203D and 6 credits of regional courses.

B.A. MAJOR IN GEOGRAPHY (SPECIAL PROGRAMS)

NOTE: It is recommended that courses which are **in bold print** be taken in U1.

Cultural Ecology

Geography **183-201B, 214A,** 215B, 203D, 312B, 317B, 319A, 324B, 451D (or Biology 177-305A and 328B or Biology 177-305A and Geography 183-300B)

Biology 177-111A, 348D, 328B or Geography 183-451D

Anthropology **151-203A,** 206A

57 credits

Geography of Economic Activity

Geography **183-201B, 202B, 216A, 217B,** 311B, 314A, 315B, 318B, 351A

Economics **154-200D,** 300A, 301B, 313D plus 12 other approved credits.

54 credits

Human Geography of the Indians and Eskimos in Canada

Geography **183-201B, 202B,** 203D, 214A, 215B, 309A, 316A, 401A, 403B

Anthropology **151-203A,** 347A, 336A, 424A

Linguistics 104-240A

Economics 154-200D

51 credits

Regional Geography

Geography **183-201B, 202B,** 203D, **214A, 216A, 217B,** 303D, 306A, 308B, 309A, 314A, or 317B plus 12 approved credits.

54 credits

Urban Systems

Geography **183-201B, 202B, 216A, 217B,** 314A, 316A, 331A, 333A, 351A (or one of Computer Sciences 308-200A,B, 220A,B) 412B

Architecture **301-205A, 232A, 235A,** 431A, 433A, 434B

Engineering 303-133B

Anthropology **151-202B,** 321B, 421A

Economics **154-200D,** or **250D,** 468A

Sociology **166-222A**

or other approved urban courses.

54 credits

B.A. HONOURS IN GEOGRAPHY

General Inquiries: Room 513, Burnside Hall, 392-5700

Advisers:
Economic/Urban: Prof. S. Olson, Room 620, 392-8245.
Cultural: Prof. E. Waddell, Room 414, 392-4718.
General Program: Prof. M.A. Carson, Room 618, 392-8245.

The Geography Department offers three programs in the B.A. Honours sequence. The General Program permits the student to pursue a broad program including courses in physical geography and environmental studies, whereas the Economic/Urban and Cultural Programs provide for more specialized instruction in areas of human geography. The programs are very similar in the first year and a student may defer the choice of program until the beginning of the second year.

All three B.A. Honours programs involve completion of at least 54 credits in approved geography courses (including a 6-credit research course) and at least 9 credits in approved social science courses outside geography. The balance (of up to 27 credits) comprises electives. The following lists specify those courses which are compulsory in these programs. **A detailed description of each program with all approved courses is available from the departmental office, Room 513, Burnside Hall.**

CORE COURSES (all programs):

Geography 201B, 202B, 203D, 351A, 482D.

URBAN/ECONOMIC PROGRAM:

Geography 214A, 216A, 217B

CULTURAL PROGRAM

Geography 214A, 216A, 300B, 309A (or 311B), 331A (or 333A).

GENERAL PROGRAM

Geography 302D, 306A (or 308B), 325A, 326A (or 236 or 311)

For detailed description of Geography courses see under Faculty of Science, page .

GERMAN (129)

Professor — A. Arnold
Associate Professors — M. BIRCHER (on leave); V. BLOCK; E. GALLATI; T. GOLDSMITH-REBER; A. HSIA; H.J. MAITRE; H. RICHTER; J. SCHMIDT; I. SCHUSTER
Sessional Assistant Professor — D. SAKAYAN
Visiting Assistant Professor — G. STEINLE

Departmental Office, Room 613, Samuel Bronfman Bldg., 392-5091.

NOTE Students may begin at the Intermediate or Advanced level in their first year if they have taken German courses in High school or in CEGEP or in a McGill Summer Session. During each of the two six week Summer Sessions, the following courses are offered every year: 129-202L, 252L, 202C and 252C.

HONOURS IN GERMAN

Advisers: Professor Goldsmith-Reber and Professor Gallati

Samuel Bronfman Bldg. 392-5090/392-5741.

The Department offers an Honours Program in German and Joint Honours with nine Departments. In Honours, a student normally takes German 200D-251D or 201D plus one of German 210A, 211B,

212A, 213B, 260D, 261A, 262B in his first year. In his second year he takes 18, in his third year 24 approved credits in German.

A student may register for Honours or Joint Honours in his second year if he has assembled the necessary credits in German. Some courses can be taken during the Summer Session.

JOINT HONOURS PROGRAM

Advisers: Professor Goldsmith-Reber and Professor Gallati, Samuel Bronfman Bldg., 392-5090/392-5094.

Joint Honours are possible with the following Departments: Classics, English, French, History, Italian, Linguistics, Philosophy, Russian, Spanish. Students enrolled in Joint Honours are requested to take 12 credits in German each year in consultation with the Department.

MAJOR IN GERMAN

Advisers: Professor Goldsmith-Reber and Professor Gallati, Samuel Bronfman Bldg., 392-5090/392-5094.

42 credits in German and 12 credits in a related field (another language, History, Linguistics, Philosophy, etc.). The courses are to be selected in consultation with the Department.

JUNIOR YEAR ABROAD

Adviser: Professor H. Richter, Room 617, Samuel Bronfman Bldg., 392-5094.

Second Year Honours students are eligible. They will study at a German-speaking European University and receive full credit for the year. Detailed information can be obtained from the Department

BEGINNERS' LEVEL

A. Emphasis on Language

129-200D GERMAN LANGUAGE INTENSIVE BEGINNERS' COURSE. (12 credits). Intensive language course, covering the first two levels in one year rather than the usual two.
Professor Sakayan

129-201D GERMAN LANGUAGE, ACCELERATED BEGINNERS' COURSE. (6 credits; 5 plus 1 hours; *Prerequisite:* none). *Texts:* H. Kessler, *Deutsch für Ausländer* (Parts 1, 1a)); H: Wittman: *Workbook in Beginning German.* An audiovisual course. The stress is on oral comprehension and expression.
Professor Hsia

129-202D GERMAN LANGUAGE, BEGINNERS' COURSE. (6 credits: 3 plus 1 hours; *Prerequisite:* none). *Text:* Curts, Groenke, Vail: *German for Beginners.* A solid, traditional method. The stress is on oral and written comprehension and expression.
Professor Arnold

129-203D GERMAN LANGUAGE, BEGINNERS' COURSE. (6 credits: 3 hours). *Text:* Jannach: *German for Reading Knowledge.* The stress is on written comprehension. Recommended for B.Sc. students, or engineers.
Professor Schmidt

129-004D GERMAN READING COURSE, METHOD AND PRACTICE OF TRANSLATION. (No credit: 2 hours. *Prerequisite:* None). *Text* as in 129-203D. Recommended for Ph.D. candidates preparing to fulfill the Language Requirement.
Professor Block

B. Emphasis on Literature and Civilization

129-210A GERMAN LITERATURE IN TRANSLATION. (3 credits; 3 hours; in English). Recommended for students taking a Beginners' Language Course concurrently. Major works from Goethe to the end of the 19th Century will be discussed.
Professor Schmidt

129-211B GERMAN LITERATURE IN TRANSLATION. (3 credits; 3 hours; in English). Recommended for students taking a Beginners' Language Course concurrently. Major works of the 20th Century will be discussed. (Mann, Kafka, Brecht).
Professor Schmidt

129-212A GERMAN LIFE AND INSTITUTIONS I. (3 credits; 3 hours; in English). Recommended for students taking a Beginners' Language Course concurrently. (Not open to students who have taken 129-212D.) *(Not given in 1976.)*
Staff

129-213B GERMAN LIFE AND INSTITUTIONS II. (3 credits; 3 hours; in English). Recommended for students taking a Beginners' Language Course concurrently. (Not open to students who have taken 129-212D).
Staff

INTERMEDIATE LEVEL

A. Emphasis on Language

129-251D GERMAN LANGUAGE, ACCELERATED INTERMEDIATE COURSE. (6 credits; 5 hours plus 1 hour laboratory; *Prerequisite:* German 201 or equivalent). *Texts:* Schulz-Sundermeyer: *Deutsche Sprachlehre für Ausländer;* several shorter literary works. Students completing this course will be admitted to any senior course in the Department.
Professor Maitre

129-252D GERMAN LANGUAGE. INTERMEDIATE COURSE. (6 credits; 1 hour plus 1 hour laboratory; *Prerequisite:* 202D or equivalent). *Texts:* Sparks-Vail: *German in Review;* Richmond-Kirby: Auslese. The stress in on oral and written comprehension and expression.
Professor Gallati

129-253D GERMAN LANGUAGE INTERMEDIATE COURSE. (6 credits; 3 hours; *Prerequisite:* German 203D or equivalent). *Texts:* Gergethon: *Grammar for Reading German. A Second Year Workbook;* Luyster, *Naturforschung von Heute;* newspapers and periodicals. The stress is on comprehension of scientific texts.
Staff

129-254D GERMAN LANGUAGE. ADVANCED INTERMEDIATE COURARSE. (6 credits; 3 hours plus 1 hour laboratory; *Prerequisite:* high marks in 202D or two years of German at the high school or CEGEP level or equivalent). *Texts:* Lermann, Rehder, Shaw and Werbow: *Review and Progress;* short novels and stories. *Not given in 1976/77.*
Staff

B. Emphasis on Literature and Linguistics

Text lists for and details on all of the following courses are available from the German Department Office.

One or two of the following courses are usually taken by students who are concurrently registered in 251D.

129-260D INTRODUCTION TO GERMAN LITERATURE. (6 credits; 3 hours; *Prerequisite:* 201D or equivalent or permission of the Department). *Texts: Kompass 3;* Several literary works.
Professor Block

129-261A DESCRIPTIVE GERMAN GRAMMAR. (3 credits; 3 hours; *Prerequisite:* An intermediate language course or permission of the Department). *Not given in 1976.*
Staff

129-262B DESCRIPTIVE GERMAN LINGUISTICS. (3 credits; 3 hours; *Prerequisites:* 261A or an intermediate language course or permission of the Department). *Not given in 1977.*
Staff

ADVANCED LEVEL

A. Emphasis on Language

129-301A, 129-302B FUNCTIONAL GERMAN I. (3 credits each; 5 hours; *Prerequisite:* 251D or 250-300 hours of German or equivalent or permission of the Department). Discussion of newspaper articles *(Die Zeit, Der Spiegel),* literary texts (selected by each group), and general topics. The stress is on vocabulary building and on fluency of speech. (Not open to students who have taken 129-301D).
Professor Schuster

129-303A, 129-304B FUNCTIONAL GERMAN II. (3 credits each; 5 hours; *Prerequisite:* 252D or 254D or 200 hours of German or equivalent). Aim of the course; same as in 301. *(Not* open to Honours and Major candidates or to students who have taken 129-302D).
Professor Schuster

129-305D GERMAN LANGUAGE (SPECIAL COURSE). (6 credits; 3 hours.) This course is intended for students who have a conversational knowledge of German, but little formal training in *writing* the language. The stress is on grammar and stylistics.
Professor Schmidt

B. Emphasis on Literature

129-310D GERMAN LITERATURE FROM LESSING TO BRECHT. (6 credits; 3 hours plus 1 hour laboratory; *Prerequisite:* 251D or 252D or 200 hours of German or equivalent). *Texts:* Several plays. "Novellen" and anthologies.
Professor Goldsmith-Reber

SENIOR COURSES

(Literature, Linguistics, Philology, Stylistics)

NOTE: Text lists for and details about all of the following courses are available from the Departmental office. Not all courses are offered every year.

Prerequisites for all senior courses are German 200D or 251D or any course at the advanced level or permission of the Department.

A. Literature

129-340A or B SCANDINAVIAN LITERATURE (in English). (3 credits). (Not given in 1976/77).
Staff

129-350D GERMAN LITERATURE IN THE NINETEENTH CENTURY (1830-1880). (6 credits).
Professor Gallati

129-360A GERMAN LITERATURE IN THE TWENTIETH CENTURY I, From Naturalism to Expressionism. (3 credits).
Professor Goldsmith-Reber

129-361B GERMAN LITERATURE IN THE TWENTIETH CENTURY II. (3 credits). (Not given in 1977).
Staff

129-362A GERMAN LITERATURE IN THE TWENTIETH CENTURY III. (3 credits). (Not given in 1976).
Staff

129-363B GERMAN LITERATURE IN THE TWENTIETH CENTURY IV, THE Post-War Period. (3 credits).
Professor Goldsmith-Reber

129-365A or B MEDIA STUDIES IN GERMAN (3 credits).
Professor Maitre

129-380A GERMAN LITERATURE OF THE ENLIGHTENMENT. (3 credits).
Professor Hsia

129-381B GERMAN LITERATURE OF THE "STURM AND DRANG" PERIOD. (3 credits). *Not given in 1977.*
Professor Hsia

129-390D HONOURS TUTORIAL I. (6 credits).
Professor Maitre

129-450A THE CLASSICAL PERIOD IN GERMAN LITERATURE. (3 credits).
Staff

129-451B GERMAN ROMANTICISM. (3 credits).
Professor Schuster

129-460A GERMAN LITERATURE IN THE AGE OF REFORMATION. (3 credits). *Not given in 1976.*
Staff

129-461B GERMAN LITERATURE OF THE BAROQUE PERIOD. (3 credits).
Professor Richter

129-490D HONOURS TUTORIAL II. (6 credits). *Not given in 1976/77.*
Professor Maitre

B. Philology and Linguistics

129-370A GERMANIC PHILOLOGY. (3 credits). A survey of the history of the Germanic languages from their Indo-European origin until the end of the Germanic migrations. The main topics of study will be the Germanic sound shift. West Germanic phonological developments and the emergence of the West Germanic dialects. The course will be given in English. *Not given in 1976.*
Professor Richter

129-371B HISTORY OF THE GERMAN LANGUAGE. (3 credits). An outline of the history of the language from Charlemagne to the present. The main developments in phonology, syntax and lexicon will be covered together with the essentials of the cultural background.
Professor Richter

129-500A or B READINGS IN A GERMANIC LANGUAGE (Gothic, or Old Icelandic, or Old Saxon.) (3 credits). *Not given in 1976/77.*
Staff

129-501A or B INTRODUCTRTION TO OLD HIGH GERMAN. (3 credits). *Not given in 1976/77.*
Professor Richter

129-510A MIDDLE HIGH GERMAN LANGUAGE. (3 credits).

129-511B MIDDLE HIGH GERMAN LITERATURE. (3 credits).
Professor Richter

C. Stylistics, Translation, Phonetics, Rhetoric

129-320A TRANSLATION AND COMPOSITION I. (3 credits).
Professor Arnold

129-321B TRANSLATION AND COMPOSITION II. (3 credits).
Professor Goldsmith-Reber

129-401A, 129-402B FUNCTIONAL GERMAN (ADVANCED) I. (3 credits each; 5 hours; *Prerequisite:* 129-301A and 129-302B or permission).
Professor Schmidt

129-403A, 129-404B FUNCTIONAL GERMAN (ADVANCED) II. (3 credits each, *Prerequisite:* 129-303A and 129-304B or permission).
Note: **not** open to Honours and Major candidates.
Staff

129-520A ADVANCED COMPOSITION AND TRANSLATION. (3 credits).
Staff

129-521B GERMAN STYLISTICS. (3 credits).
Staff

129-530A or B THEORETICAL AND PRACTICAL GERMAN PHONETICS (CONTRASTIVE). (3 credits). *Not given in 1976/77.*
Professor Goldsmith-Reber

HISPANIC STUDIES (144)

Professor — SOLOMON LIPP *(Chairman)*
Associate Professors — MARCELINO AMASUNO; MONICA HARVEY; NELLY MARTINEZ; ANDRE MICHALSKI; VICTOR OUIMETTE; JULIO SANCHEZ; VICTORIANO UGALDE CUESTA
Assistant Professor — JEAN MARC VARY
Lecturers — KAY SIBBALD; DIANE WILLIAMSON

Samuel Bronfman Building, Room 680, Telepnone 392-4600

The Hispanic Department offers courses in language as well as literature and civilization of Spain and Latin America. The basic philosophy of the Department is dominated by a desire to expand the students' liberal arts background by acquainting them with the culture of other national groups. An enrichment in this area, it is felt, reduces provincialism and broadens one's intellectual horizon. This humanistic approach is indisispensable, regardless of professional interests or fields of specialization, such as high school or college teaching, or work in Latin American studies. One is a more competent professional if one has been exposed to this perspective.

MAJOR PROGRAM

42 credits at the second year level or above plus 12 credits in related subjects, approved by the Department. Students may wish to concentrate either in

Peninsular Spanish literature or Spanish American literature. At least twelve credits should be taken in Spanish America literature if the Major is in Spanish literature, and vice versa.

Required Courses

6 credits in civilization
6 credits in survey of literature

Highly Recommended Courses

Spanish 144-355A (Methods of Literary Analysis)
Spanish 144-451B (Cervantes: *Don Quijote)*
Adviser to Major Program: Miss Sibbald, 392-4618.

HONOURS PROGRAM

With the permission of the Department, a more advanced Spanish course may be taken if the student has studied Spanish previously and has acquired proficiency in oral work.

The Honours program in Spanish has been designed to enable the student to pursue his studies in one of two directions:

1) Emphasis on Spanish Literature
2) Emphasis on Spanish American Literature

Honours students are expected to achieve a high 'B' in all Spanish courses, as well as satisfactory standing in all other courses.

In order to be graduated with Honours in Spanish, a student will be required to write a research paper on a theme of his choice, under the guidance of a member of the Department.

The Department reserves the right to determine whether a student will be advanced or withdrawn from the Honours program.

Prerequisite: A First year Spanish course with a final grade of 75.

Requirements: A minimum of 60 credits including 214D or 217A,B.

NOTE: Courses numbered in the 50s (e.g., 351, 453, etc.) are designed primarily for Honours students. However, others may enrol with the permission of the instructor.

Obligatory Courses (to be taken during the U-2 or U-3 years):

Spanish 144-355A (Methods of Literary Analysis)
Spanish 144-451B (Cervantes: *Don Quijote)*
Spanish 144-456A (History of the Language)

Students concentrating in Spanish Peninsular Literature must take Spanish 144-457B (Medieval Literature) which is offered in alternate years.

Honours students are expected to take *either* Spanish Civilization and Survey of Spanish American Literature *or* Spanish American Civilization and Survey of Spanish Literature as basic courses.

Honours adviser: Professor Harvey, 392-4618.

JOINT HONOURS

Students may combine Honours in Spanish with Honours in any one of the following subjects: Classics, English, French, German, Italian, Linguistics, Philosophy, Russian. Students enrolled in Joint Honours are required to take 12 credits in Spanish each year. The following two courses must be included in the program: Spanish 144-355A (Methods of Literary Analysis) and Spanish 144-451B (Cervantes: *Don Quijote).* As in the case of single Honours, a research paper will be required.

Students may begin Single or Joint Honours in Spanish in their second year if, in the opinion of the Department, they are qualified to do so.

Adviser: Professor Amasuno, 392-4615, or Professor Lipp, 392-4601.

COURSE DESCRIPTIONS

144-202D PORTUGUESE LANGUAGE. (6 credits): A comprehensive first year course in speaking, reading and writing. Selected readings in Portuguese and Brazilian literature. Four hours weekly, including laboratory.
Professor Harvey

Note: There is no intermediate course at present.

144-210D SPANISH LANGUAGE. (6 credits). A comprehensive first year course in speaking, reading and writing. An introduction to Spanish and Spanish American civilization. Four hours weekly, including laboratory.
Professor Vary

144-214D ADVANCED ORAL AND WRITTEN EXPRESSION. (6 credits). Second year course. Review of grammar. Practice in speaking and writing. Completion of this course admits students to senior courses. Prerequisite: 210D or equivalent. Three hours weekly. (Not open to students who have taken 144-215A,B, 216A,B or 217A,B).
Miss Sibbald

144-217A,B ADVANCED ORAL AND WRITTEN EXPRESSION. (3 credits; Prerequisite: two years Spanish at the CEGEP level or equivalent). Review of grammar. Practice in speaking and writing. Three hours weekly. (Not open to students who have taken 144-216A,B or 144-214D).
Miss Sibbald

144-221A SPANISH CIVILIZATION. (3 credits). Survey of the culture and history of the Spanish people from the origins to the rise of the Spanish empire.
Professor Amasuno

144-222B SPANISH CIVILIZATION. (3 credits). Survey of the culture and history of the Spanish people from the Golden Age (including The Conquest of the New World) to the present era.
Professor Amasuno

144-231A SPANISH AMERICAN CIVILIZATION. (3 credits). From the indigenous period (Aztec, Maya and Inca civilizations) to Independence from Spain.
Professor Michalski

144-232B SPANISH AMERICAN CIVILIZATION (3 credits). From Independence to the present era.
Professor Michalski

144-241A SURVEY OF SPANISH LITERATURE. (3 credits). From the origins to the Golden Age, through a study of representative works.
Professor Ouimette

144-242B SURVEY OF SPANISH LITERATURE. (3 credits). From the Golden Age to the modern period through a study of representative works.
Professor Ouimette

144-243A SURVEY OF SPANISH AMERICAN LITERATURE. (3 credits). From the Colonial period to Modernism through a study of representative works.
Professor Martinez

144-244B SURVEY OF SPANISH AMERICAN LITERATURE. (3 credits). From Modernism to the present through a study of representative works.
Professor Martinez

144-315A,B FUNCTIONAL SPANISH. (3 credits). A Third Year level course: problems of advanced grammar and syntax. Written exercises, oral reports and summaries of reading selections will provide the basis for discussion. For Spanish majors only. (Not open to students who have taken 144-316A, B).
Professor Amasuno

144-316A,B FUNCTIONAL SPANISH. (3 credits). For students not enrolled in the Department of Hispanic Studies. (Not open to students who have taken 144-315A,B).
Professor Vary

144-321A SPANISH LITERATURE OF THE 18TH CENTURY. (3 credits). *Not given in 1976-77.* A critical study of neo-classical drama and poetry; satirical prose; Jovellanos, Iriarte, Moratín and others.
Miss Sibbald

144-324B 20TH CENTURY DRAMA. (3 credits). Satirical drama and theatre of social protest. *Literatura comprometida.* García Lorca and Casona; Buero Vallejo, Sastre, Olmo, Muniz, Arrabal and others.
Miss Sibbald

144-325D THE SPANISH NOVEL OF THE 19TH CENTURY. (6 credits). The Romantic, Realist and Naturalist novel in Spain, with special emphasis on the works of Pérez Galdòs and the development of the Spanish novel in relation to contemporary trends in other European countries.
Professor Ouimette

144-326B SPANISH ROMANTICISM. (3 credits). *Not given in 1976-77.* The aesthetic and historical development of Romanticism, with special emphasis on lyric poetry and drama. (Not open to students who have taken 144-322B or 144-323A).
Professor Ouimette

144-327A LITERATURE OF IDEAS: SPAIN. (3 credits). *Not given in 1976-77.* Critical reading and discussion of works of outstanding thinkers as a key to understanding the development of social forces and institutions.
Professor Lipp

144-328B LITERATURE OF IDEAS: SPANISH AMERICA. (3 credits). *Not given in 1976-77* Critical reading and discussion of works of outstanding thinkers as a key to understanding the cultural development of a continent.
Professor Lipp

144-332A SPANISH AMERICAN LITERATURE OF THE 19TH CENTURY. (3 credits). *Not given in 1976-77.* An intensive study of representative authors from the period of Independence to the advent of Modernism.
Professor Sánchez

144-333A SPANISH AMERICAN DRAMA. (3 credits). *Not given in 1976-77.* A study of the outstanding works of the theatre from the colonial period to the present, including pre-Columbian works.
Professor Harvey

144-350D THE GENERATION OF 1898. (6 credits). *Not given in 1976-77.* Spiritual and intellectual renewal in Spain from the war of 1898 to the Civil War, as seen principally in the works of Unamuno, Antonio Machado, Baroja and Valle Inclán. Politics and aesthetics.
Professor Ouimette

144-351D SPANISH AMERICAN NOVEL OF THE 20TH CENTURY. (6 credits). *Not given in 1976-77).* Representative authors of the 20th Century. The novel of the land: The Indianist Novel, The Mexican Revolution.
Professor Sánchez

144-355A METHODS OF LITERARY ANALYSIS. (3 credits). Discussion of literary style and techniques; recent trends in criticism. Critical study of various authors for purposes of illustration.
Professor Martinez

144-356B SPANISH AMERICAN SHORT STORY. (3 credits). *Not given in 1976-77.* Study of style, tendencies and types as reflected in the evolution of this genre, and seen against the background of a developing continent.
Professor Sánchez

144-421A GOLDEN AGE PROSE. (3 credits). The Picaresque and Pastoral Novels. Satirical prose.
Professor Ugalde

144-422B GOLDEN AGE PROSE. (3 credits). Didactic Prose. Ascetism and Mysticism.
Professor Ugalde

144-423B MODERN LYRIC POETRY. (3 credits). *Not given in 1976-77.* Poets in exile and counter movements in 20th Century Spain: García Lorca, Alberti, Salinas, Aleixandre, Cernuda and Hernández.
Miss Sibbald

144-424B SPANISH NOVEL SINCE THE CIVIL WAR. (3 credits). Cela and *Tremendismo.* Women novelists. Writers in exile: Goytisolo and others.
Professor Amasuno

144-432B SPANISH AMERICAN COLONIAL LITERATURE. (3 credits). A study of the outstanding works from the period of conquest and colonization to the wars of Independence.
Professor Sànchez

144-440A THEMES IN HISPANIC LITERATURE. (3 credits). Reserved for Honours students who are writing their honours thesis during their final year of study.
Staff

144-442B MODERNIST POETRY. (3 credits). *Not given in 1976-77.* A study of the Modernist School of Spanish American Poetry, beginning with Rubén Darío.

144-451B CERVANTES. (3 credits). *Don Quijote.*
Professor Ugalde

144-452A CERVANTES. (3 credits). *Not given in 1976-77. Novelas ejemplares. Comedias. Entremeses.*
Professor Ugalde

144-453B SPANISH AMERICAN POETRY SINCE MODERNISMO. (3 credits). *Not given in 1976-77.* A study of the poetic movements which followed *Modernismo: ultraísmo, vanguardismo, creacionismo.*

144-454D THE "NEW" SPANISH AMERICAN NOVEL. (6 credits). *Not given in 1976-77.* A study of the "New Novel": its characteristics and techniques as represented by some of its outstanding contemporary exponents.
Professor Martínez

144-455A GOLDEN AGE POETRY. (3 credits). *Not given in 1976-77.* Study of representative poets of the Renaissance and Baroque periods From Garcilaso and Italian influences to Góngora and Quevedo.
Miss Sibbald

144-456A HISTORY OF THE LANGUAGE. (3 credits; Prerequisite for 144-457B). The development of Spanish from its beginnings to the Modern Period, including usage in Spanish America and Judeo-Spanish.
Professor Harvey

144-457B MEDIEVAL LITERATURE. (3 credits; Prerequisite: 144-456A). *Not given in 1976-77.* A study of important works of the period: *Poema de Mío Cid* to *La Celestina.*
Professor Harvey

144-458A GOLDEN AGE DRAMA. (3 credits). *Not given in 1976-77.* Lope de Vega, Tirso de Molina, Ruiz de Alarcón, and others.
Professor Ugalde

144-459B GOLDEN AGE DRAMA. (3 credits). *Not given in 1976-77.* Calderón de la Barca, Rojas Zorrilla, Moreto and others.
Professor Ugalde

144-470A TUTORIAL. (3 credits)

144-471B TUTORIAL. (3 credits)

144-472D TUTORIAL. (6 credits).

HISTORY (101)

Professors — C.C. BAYLEY; V. BOSS; P.C. HOFFMANN *(on leave 1976-77);* H. SENIOR *(on leave 1976-77);* R. VOGEL
Associate Professors — P.H. BOULLE; L.L. LAPIERRE; P.T.K. LIN; M.P. MAXWELL; A.R. RIGGS
Assistant Professors — M.J. ECHENBERG *(on leave 1976);* J.W. HELLMAN; E. LAFFEY; C. MILLER; S.J. RANDALL (Chairman); J.H. THOMPSON; B.J. YOUNG
Lecturers — G.D. HUNDERT; R. RICE; H.C. SCHLIEPER
Visiting Staff — PROFESSOR W. LEITSCH

General Office and Information: Room 625, Sixth Floor, Stephen Leacock Building
Telephone: 392-5192

Academic Advisers:
P.H. Boulle, G.D. Hundert, M.P. Maxwell, R. Rice, A.R. Riggs, J.H. Thompson

The Department of History offers a wide range of courses in the history of such areas as Africa; Britain; Canada, with considerable emphasis being placed on French Canada and Québec; East Asia; Eastern Europe; France, Germany, Russia and the United States. In addition, courses are offered on such topics as International Relations, the History of Medicine, Jewish History and War and Society. Greek, Roman, and Islamic history are taught in other departments with which the Department of History is closely associated.

The Department offers two kinds of programs — Honours and the Major. The Honours program offers a high degree of specialization in history with much individual instruction to qualified students. The Major provides for a measure of concentration in history in conjunction with an opportunity to take courses in other disciplines. Candidates who wish to study history as an Honours or Joint Honours

subject, or who wish to major in History, must consult the Department as to their program. The general description of the Honours and Major programs will be found below.

Candidates entering University as U1 students may take all courses at the 200 level and courses at the 300 level for which they have prerequisites.

MAJOR IN HISTORY

Director: Professor J.H. Thompson
Office: Room 620, Stephen Leacock Building
Telephone Number: 392-5190

Requirements:

Students who choose a Major in History should consult an adviser in the Department **before** the day of their formal registration at the University.

The following types of Major programs are available within the Department of History.

1. AREA MAJOR

This is the most usual type of History major, in which a student concentrates in the history of a geographic area. The Department offers the following areas:

Canada, United States, General Europe, Eastern Europe, Western Europe, Great Britain and Asia.

The area major consists of a total of **54 credits** divided as follows:

a) 24 credits in History **within** the area of specialization
b) 18 credits in History **unrelated** to the area of specialization
c) 12 credits **outside** History related in theme to the area of specialization. Introductory courses in some cases **do not** meet this requirement.

Please note that 24 of the 42 credits in History must be at the 300 level or above.

2. THEMATIC MAJOR

This type of program can be arranged for students who do not wish to be bound to a particular area. Some examples of themes which have been used are Colonial Development, Imperialism, the Jews, and War and Society. In recent years the thematic major has been used to deal with students who wish to study North America, non-Western Societies or The "Third World"

The thematic major consists of **54 credits** divided as follows:

a) 30 credits (not 24 as in #1) in History **within** the theme of specialization
b) 12 credits in History **outside** this theme
c) 12 credits **outside** History related to the theme

Please note that 24 of the 42 credits in History must be at the 300 level or above.

3. MAJOR WITH A DOUBLE CONCENTRATION

These programs, administered solely by the Department of History, allow a student to concentrate in the study of History and another subject. The program contains **60 credits,** distributed as follows:

a) 30 credits in History, 18 of which must be at the 300 level or above
b) 30 credits in another subject, 18 of which must be at the 300 level or above

Please note that students in this program are **History majors.** This designation and **only** this designation appears on their transcripts.

4. MAJOR IN HISTORY AND POLITICAL SCIENCE

This is the department's only cooperative major program, and students selecting this program must consult an adviser in **both** the Department of History and the Department of Political Science. This program contains **60 credits** distributed as follows:

a) 30 credits in History, 18 of which must concentrate on a **theme**
b) 30 credits in Political Science, 18 of which must concentrate on a **theme.**

Students who register in any of the above program should also be aware that:

1. Many related non-History courses have prerequisites, as for example those in Political Science, Economics and Sociology. Students must make certain that they obtain these prerequisite courses in the U1 or U2 year.
2. Introductory courses are in some cases not suitable as related non-History courses, since they provide only a basic introduction to a discipline. The best example of such a course is 154-200D, Introduction to Economics.
3. The total number of credits allotted to History courses is a **minimum.** Student may take other History courses as **electives.**

Under normal circumstances candidates who have completed the major program in History will not be eligible to enter the graduate program of the History Department unless they are prepared to do qualifying work.

HONOURS IN HISTORY

Director: Professor A.R. Riggs
Office: Room 611; Stephen Leacock Building
Telephone Number: 392-5187

Requirements:

The purpose of the honours program is to give students an opportunity to study an area or theme of history in some depth under the close direction of a member of staff. Each honours student's program is worked out to suit his or her specific needs within the general framework of the program. The rules of

the program are designed to lead the student from introductory courses to more advanced courses while, at the same time, enabling the student to acquire ancillary skills, such as language, which are necessary for historical research in particular areas.

Candidates are required to arrange their individual programs in consultation with the Department at the beginning of each academic year and to maintain a high CGPA (B minimum in all history courses, and B minimum overall average).

The honours program in the History Department is divided into four major areas of concentration: The history of North America, the history of Great Britain, European history and East Asian history. Honours students are required to have a reading knowledge of such foreign language or languages as may be appropriate to their proposed course of study.

The full honours history student normally takes eleven courses (sixty-six credits) in history over a three-year period (see note at the end of this statement). If a student must acquire a language or other ancillary skill, or if there is a strong case for taking a historically oriented course in another discipline, the history requirement can be diminished.

The **first year** of the program is primarily devoted to taking introductory history courses (usually 3) so that a general perspective on the past is obtained. Introductory courses should not be taken in the second and third years.

In the **second year** the student begins to specialize in one of two ways. In addition to advanced courses that lead on from the work done in the previous year, the student may either take two seminars, normally one in the second and one in the third year of study, or he or she may opt for the tutorial system.

The seminar option enables students to do research and participate in discussion in at least two areas which can be as far apart as "France during the Ancien Régime" and "Africa and the two World Wars". The student thereby acquires knowledge beyond that provided in an advanced course in at least two areas of specialization.

The tutorial route is designed for those students who wish to concentrate on one period of history. Students taking tutorials instead of the seminars work with one member of staff over a period of two years. As in other courses, evaluation and marks during each of the two years are based on the student's written and oral work. At the end of the second tutorial year, a **paper** is presented which is usually a substantial piece of work based on primary sources. Often a tutorial student will concentrate during U2 on the secondary works written about a particular period and in U3 work on primary material. The tutorial method provides students with a high degree of personal supervision.

Candidates for the honours degree may offer History 490D/491D— the two-year tutorial program — chosen from one of the following areas:

a) — England in the Age of Wycliff,
— England from the Restoration to the accession of George IV,
— selected topics in Canadian history,
— France in the 16th and 17th centuries,
— a topic in German history after 1800,
— the Russian Revolutions of 1917,
— topics in Jewish history,
— West African history,
— selected topics in United States history,

OR

b) they may choose to take one undergraduate seminar per year.

An **oral examination** at the end of U3 is given by a panel usually consisting of professors whose courses the candidate has taken. The oral examination enables the Department to arrive at an overall assessment of the candidate's success in his or her undergraduate studies. The results of oral examinations will not appear on official transcripts, but they are among the criteria in deciding on applications for admission to graduate study, and in recommending candidates to other departments, faculties, and graduate schools.

JOINT HONOURS:

Those students who find the full honours program too specialized may enroll in the joint honours program. This permits the division of the honours course requirements between history and another subject — anthropology, classics, economics, English, geography, German, philosophy, political science, and others; programs are worked out jointly by the history department and the other department concerned. Joint honours students take one history seminar within their six-course program in history. In a few cases joint honours students enter one of the two-year tutorials. Students should consult both departments with regard to programs and registration in joint honours courses. Programs will be designed to fit the individual interests of candidates but normally require an equal number of upper year courses in both disciplines.

For information on the honours program in East Asian Studies, which is offered in conjunction with the History Department, see page 34.

NOTE: Not as an encouragement for deviation from the program outlined above, but in recognition of compelling circumstances and academically legitimate wishes on the part of students, the possibilities for deviation from the usual 11-course requirement are defined as follows. No more than three full-year historically oriented courses may be taken, in exceptional cases, outside the Department of History, or outside the University. A maximum of one such course or history course, taken as a summer course may be accepted within the limits of the three courses outside the Department if strong academic reasons favour such a decision. History courses taken at CEGEP's cannot be part of the 11-course requirement. In joint honours programs, no more than one history or historically oriented course may be taken outside the Department. Students may take one advanced language course each in

their U2 and U3 years and have them counted in their 11-course requirements, if these language courses are necessary and relevant to their program. Introductory language courses cannot be accepted as part of the honours program requirements. Bilingual students will not be permitted to take language courses in one of their two languages as part of their honours program requirements.

COURSE DESCRIPTIONS

101-200D A HISTORY OF AFRICA. (6 credits. This course is not open to candidates who have previously taken History 210A and History 220B). A study of African cultures from the beginning of the Iron Age to the contemporary emergence of African States, with emphasis on the period since 1780. Stress is placed on the political and cultural relations of African societies with each other, with Europe and with Islamic civilization.
Professor

101-202A CANADA TO 1867. (3 credits). A survey of the development of Canada, from the pre-Columbian explorations until the Confederation period. Social, economic and political history will be examined in a general way. (Not open to students who have previously taken History 101-202D).
Professors Rice and Young

101-203B CANADA SINCE 1867. (3 credits). A survey of the development of Canada from Confederation to the present day. Social, economic and political history will be examined in a general way. (Not open to students who have previously taken History 101-202D).
Professors Rice and Thompson

101-204D HISTORY OF GREAT BRITAIN. (6 credits). Survey of the development of Britain from the Middle Ages. Emphasis will be placed on political changes, seen in relation to the economic, social and intellectual background.
Professor Maxwell

101-206D HISTORY OF EASTERN EUROPE (FROM 4th Century.) (6 credits). *Not given in 1976-77.* The emergence of the first states, Christianization, and the Byzantine heritage; the medieval kingdoms of Poland, Bohemia and Hungary; the Ottoman conquests; Renaissance, Reformation and Enlightenment in Eastern Europe; the Hapsburg Monarchy; the Balkans, and the rise of nationalism in the nineteenth century.

101-207D A HISTORY OF THE JEWS FROM LATE CLASSICAL TIMES TO THE PRESENT. (6 credits; Prerequisite: History 215D, possibly concurrently, is recommended). A general introductory survey of the history of the Jewish people from late classical times to the present in the context of general world history. Emphasis will be placed on general trends and developments, and special attention will be paid to areas of major Jewish settlement. The first term will deal with the period up to 1492, while the second term will cover the period from 1492 to the present.
Professor Hundert

101-208D THE DEVELOPMENT OF EAST ASIAN CIVILIZATION. (6 credits). History and salient features (social, political, economic, and intellectual) of the traditional civilization of China and Japan, from earliest times to the mid-19th century.
Professor Lin

101-209D THE MIDDLE EAST FROM THE RISE OF ISLAM TO 1797. (6 credits). *Not given in 1976-77.* The origins of the Early Islamic state in Arabia and the Umawi Caliphate. The growth of an Islamic civilization and the 'Abbasi Empire until the Seljuk period. The rise of the Fatimids. The Seljuks and the medieval synthesis. The Crusades. The Mongols and the destruction of the Baghdad Caliphate. The Mamluk, Persian, and Turkish Empires until 1797.
Professor Verdery (of the Institute of Islamic Studies).

101-211A THE UNITED STATES TO 1865. (3 credits). English colonization of North America, development of representative government, colonial wars and revolution, the Constitution, society and politics of the nineteenth century, and the Civil War. Emphasis is placed on Puritanism, the American Revolution, and the men who fashioned and guided the new republic.
Professor Riggs

101-215D EUROPEAN CIVILIZATION IN THE MEDIEVAL AND MODERN PERIODS. (6 credits). The medieval period is studied in terms of its typical institutions; the Empire, the Papacy, feudalism, the guild, the dynastic state, etc. In the modern period, main emphasis is laid on the emergence of the Great Powers, and the long-term problems, at home and abroad, which conditioned their policies. This course provides a preparation for the study of European history. (Not open to students who have previously taken 101-105D).
Professor Vogel

101-221B THE UNITED STATES SINCE 1865. (3 credits. Prerequisite: History 211A or consent of instructor). The growth of industry, reconstruction, populism and progressivism, World War I, the New Deal, and World War II. Stress is placed on the political and social consequences of industrialization and urbanization.
Professor Randall

101-225D A HISTORY OF FRANCE. (6 credits). A survey of French society since the fall of the Roman Empire, with particular emphasis on the post-medieval period and economic, social and political developments.
Professor Boulle

101-235D A SURVEY OF GERMAN HISTORY. (6 credits). This course will give an overview of German history from its beginnings to the present. Selected aspects will be dealt with in depth; the

foundations of the medieval Empire; the Reformation; the era of the World Wars. The course is an introduction to the entire field and will include some discussion of historiography.
Professor

101-236D HISTORY OF RUSSIA TO THE EARLY 20th CENTURY. (6 credits). The formation of the Kievan state, the Mongol occupation, the emergence and integration of the Muscovite state, the Petrine reforms, the "modernisation" of Russia, the evolution of imperial Russian society. Emphasis is placed on the diverse interpretations of social, political, and intellectual themes in Russian history. (Not open to students who have previously taken 306A or 306D).
Professors Boss and Schlieper

101-239A HISTORY OF SCIENCE — FROM BACON TO NEWTON AND LEIBNIZ. (3 credits). The development of scientific ideas from Francis Bacon and his contemporaries on the Continent to the foundation of the Royal Society and the Newtonian synthesis. The main emphasis will be on Newton and the activities of his disciples and opponents, including Leibniz, Boscovich, Lomonosov, and the early popularisers of Newtonianism in France, Italy, and Germany. (Not open to students who have previously taken 439A).
Professor Boss

101-280D MEDIEVAL LIFE AND INSTITUTIONS. (6 credits). The history of the Middle Ages is approached in terms of its typical institutions — the Church, the Holy Roman Empire, feudalism, the towns, the guilds, the representative system — with an analysis of the social groups attached to each. The crises which modified these institutions in the late Middle Ages are analysed as phases of the transition to the modern period of European history.
Professor Bayley

101-303A QUEBEC SINCE 1840. (3 credits; Prerequisite: History 202D or consent of instructor). Designed for the student with a general interest in French Canada, this one-term course will concentrate on Quebec's major economic, social and political issues. Special attention will also be given to the English-speaking community. (Not open to students who have previously taken 313D).
Professor Young

101-304D BRITISH IMPERIAL POLICY FROM 1783. (6 credits; Prerequisite: Any course in British or Colonial history or consent of the instructor). The composition and development of British policy, stressing the interplay between domestic attitudes and imperial needs and opportunities as demonstrated in humanitarian, missionary, intellectual, economic and strategic interests.
Professor

101-305D WAR AND SOCIETY IN MEDIEVAL AND MODERN EUROPE. (6 credits. Prerequisite: one general course in European history is desirable). *Not given in 1976-77.* War in Roman, Carolingian, and feudal society; rise of permanent armies and navies; military institutions of eastern Europe; warfare from Wallenstein to Napoleon; emergence of the national army in Russia; the Western military tradition after Clausewitz; the Communist doctrine of war.
Professors Bayley and Vogel

101-307D THE HISTORY OF THE JEWS IN POLAND, c. 1100-1945. (6 credits; Prerequisite: History 207D or permission of instructor). The course will include analyses of primary sources (in translation) related especially to the social, economic and institutional history of the Jews in Poland and their place in the East European Jewish community. Topics to be discussed: the Jews during "The Flood" (1648-1667), the communal crisis of the late 17th century, the Frankist movement, and Hasidism.
Professor Hundert

101-308D HISTORY OF CHINA. (6 credits.) A survey course in the history of China from earliest times to 1911 with particular attention to social, intellectual and institutional change.
Professor Laffey

101-309A CANADA AND THE BRITISH EMPIRE. (3 credits; Prerequisite: History 202D or consent of instructor). This course will attempt to place the political, economic and cultural history of Canada within the broader perspective of the British empire, beginning with the cession of Acadia to England in 1713 and ending in the era of the First World War.
Professor Rice

101-310D TOPICS IN LATIN AMERICAN HISTORY. (6 credits). *Not given in 1976-77.* This is a survey course in its chronological scope, but it will concentrate on the social, cultural, and economic aspects of Latin American civilization from the preindustrial through the modern period. The topical rather than purely chronological approach is intended to provide latitude for both the general student and the more specialized.
Professors Echenberg and Randall

101-314D TUDOR AND STUART ENGLAND. (6 credits; Prerequisite: History 204D or consent of the instructor). A study of English society, politics, and thought from the end of the Middle Ages to the eighteenth century. Among the topics discussed are the developments of the English state: economic expansion; the religious revolution; the civil war and its consequences; the intellectual and social changes.
Professor Maxwell

101-315D CONTEMPORARY EUROPEAN HISTORY. (6 credits; Prerequisite: any course in European history, e.g., 204D, 206D, 215D, 225D, 235D, or equivalent). This course will be devoted to a study of major developments in the 19th and early 20th centuries. Special emphasis will be given to

the French Revolution, the rise of the working classes, liberalism, nationalism, imperialism and the European balance of power.
Professor

101-318D A HISTORY OF JAPAN. (6 credits). A survey course in the history of Japan from the transmission of Buddhism (552 A.D.) to the 20th century, with particular attention to Modern Japan.
Professor

101-319D THE MIDDLE EAST FROM 1798 TO 1949. (6 credits; Prerequisite: History 209D or consent of instructor). Turkey, the eastern Arab lands, and Persia at the start of European encroachment; the 19th century beginnings of modernization. The rise of Arab, Persian, and Turkish nationalism as a reaction to European imperialism. World War I and its Middle Eastern legacy. Interwar political developments. World War II and after, to the establishment of the State of Israel. (This course will be given in alternate years.)
Professor Verdery (of the Institute of Islamic Studies.)

101-322B CANADA AND THE AMERICAN PRESENCE SINCE 1939. (3 credits; Prerequisite: History 202D or consent of instructor). An examination of Canada's relationship with the United States in the modern era. Emphasis will be placed upon diplomatic, military, cultural, and economic facets of this relationship.
Professor Thompson

101-325D WESTERN EUROPE FROM THE RENAISSANCE TO THE 18th CENTURY. (6 credits). A study of the development of political and social institutions, religion and culture, e.g. the Italian communes and principalities; humanism; the Reformation; the scientific revolution of the 18th century; the changing character of social classes, the development of absolutism; the critical thought of the 18th century.
Professor Boulle

101-326D RUSSIA IN THE TWENTIETH CENTURY. (6 credits). A survey of Russian and Soviet history from the reign of Nicholas II to the present, with particular emphasis on the development of the revolutionary movement prior to 1905, the First World War, the fall of the tsarist regime, the revolutions of 1917, Lenin and the Comintern, Trotsky and the rise of Stalin, collectivization and the purges, Nazi-Soviet relations and the Second World War, and the changes in Soviet society after Stalin. (Not open to students who have previously taken 216A or 406D).
Professors Boss and Schlieper

101-331D EMERGING MODERN AMERICA, 1877-1945. (6 credits; Prerequisite: History 211A and 221B or consent of the instructor. This course is not open to candidates who have previously taken History 311A and/or History 321B). The development of society in the united States from the end of Reconstruction until the death of Franklin D. Roosevelt. Emphasis is placed on the impact of industrialization and urbanization, the growth to world power, and the various movements of reform, including Populism, Progressivism, and the New Deal.
Professor Riggs

101-332D CANADA AND THE BIRTH OF CONFEDERATION. (6 credits; Prerequisite: History 202D or equivalent or consent of the instructor.) This course will examine the social, cultural, political and constitutional development of Canada from 1840 to 1896. Particular attention will be given to the effect of federal policy on regional development, the interaction of the various sections of Canada, and on church and state relations.
Professor LaPierre

101-334D THE COMING OF THE FIRST WORLD WAR. (6 credits; Prerequisite: Any course in modern European History). *Not given in 1976-77.* While this course will deal principally with the diplomatic relations between the major European Powers and the various crises which disturbed European peace, it will also attempt to examine the political and social structure of the Great Powers and the bearing this had upon the course of international diplomacy.
Professor

101-336D A HISTORY OF FRANCE SINCE 1789. (6 credits). A study of the major social, political, and cultural changes which France has undergone since the Revolution. Special emphasis will be placed on the struggle between religious and anti-clerical (or anti-religious) forces in the nineteenth century, on the history of revolutionary movements of the Left and of the Right, and on the transformations of these phenomena in the contemporary period.
Professor Hellman

101-341D THEMES IN THE SOCIAL AND ECONOMIC HISTORY OF THE UNITED STATES, 1830-1940. (6 credits; Prerequisite: History 211A and 221B or consent of instructor). *Not given in 1976-77.* The course is designed to examine a number of closely related themes in the socio-economic history of the United States in the 19th and 20th centuries. The emphasis in the course will be on the processes of industrialization and urbanization and their impact on American life and institutions, including the Church, the family, education, labour organizations and the working classes, the professions, and literature.
Professor Randall

101-342A THE HISTORY OF CANADA'S EXTERNAL RELATIONS: 1867-1939. (3 credits; Prerequisite: History 202D). *Not given in 1976-77.* This course will examine the historical development of Canadian external relations before World War II. Particular emphasis will be placed on Canadian-American relations, Canadian-Imperial relations, the growth of Canadian diplomatic autonomy and participation in the League of Nations.
Professor Miller

101-345D FRANCE IN THE 17th AND 18th CENTURIES. (6 credits). *Not given in 1976-77.* Selected topics in French internal history from the end of the Wars of Religion to the outbreak of the French Revolution. Topics to be selected after discussion with the class; emphasis to be placed on class participation, class presentations and class discussion. (A reading knowledge of French is essential.)
Professor Boulle

101-349A HEALTH AND THE HEALER IN WESTERN HISTORY. (3 credits. This course is not open to candidates who have previously taken History 429D or 409A). This course traces the natural history of health and disease and the development of the healing arts, from antiquity to the beginning of modern times, focussing on that group of cultures which gave rise to "western" medicine. Use of a sociological and anthropological perspective invites students to see health and healing as gradually evolving aspects of society and culture.
Professor Bates (of the Department of the History of Medicine)

110-352D EMERGENCE OF ENGLISH CANADA, 1791-1867. (6 credits; Prerequisite: History 202D or consent of instructor). *Not given in 1976-77.* This course will be primarily concerned with the history of Upper Canada from its pioneer origins until Confederation. Special consideration will be given to immigration, urbanization and to relations with French Canada after the Union of 1841.
Professor Senior

101-353D WAR AND SOCIETY IN CANADIAN HISTORY. (6 credits; Prerequisite: History 202D. This course is not open to candidates who have previously taken History 372D). The first half of this course will consist of lectures by members of the staff on various social problems which have arisen in the pursuit of war, the fighting of rebellions, the development of armed forces, and the attempts to cope with civil disobedience and terror. The second half of the course will be devoted to individual study through supervised and guided reading and research.
Staff

101-355D GERMANY IN THE 19th CENTURY. (6 credits; Prerequisite: History 235D or consent of the instructor). *Not given in 1976-77.* German political, constitutional and social history, 1740-1914. Emphasis: the struggle of the two German Great Powers for control of Germany; Reform Era and Industrialization; the evolution of Prussian hegemony: diplomatic and social development leading to 1914.
Professor Hoffmann

101-359B MEDICINE AND SOCIETY. (3 credits. This course is not open to candidates who have previously taken History 419B or 429D). *Not given in 1976-77.* A survey of medicine in the West during the 19th and 20th centuries with special reference to the social aspects.
Professor Bates (of the Department of the History of Medicine)

101-362D THE WEST AND THE NORTH IN CANADIAN HISTORY. (6 credits; Prerequisite: History 202D). An examination of British Columbia, the Prairie Provinces and the North from the period of exploration and settlement until the present day. Emphasis will be placed on social and economic development and on the relationship of these regions to Central Canada.
Professor Thompson

101-363D CONTEMPORARY CANADA, 1890-1970 (6 credits; Prerequisite: History 202D or equivalent, or consent of instructor. This course is not open to candidates who have previously taken History 302A or 312B). This course will study Canadian social and political development since 1890. It will give particular attention to reform movements, third party protest, urbanization, regionalism, war, foreign policy (notably Canadian-American relations) and the Quiet Revolution.
Professor Miller

101-368D TRANSFORMATION AND DEVELOPMENT IN THE PEOPLE'S REPUBLIC OF CHINA. (6 credits; Prerequisites: History 208D or consent of instructor). The transformation of China"s society and economy and of Chinese institutions and ideas since 1949, with special reference to the dynamics of phased transition, both in conceptual approach and in actual practice. (Not open to students who have taken 101-468D).
Professor Lin

101-403D THE COMING OF THE QUIET REVOLUTION. (6 credits; Prerequisite: Any course in Canadian or Quebec history). Although this course will deal principally with the formation and development of social and economic groups in Quebec since the twenties, it will also attempt to study the political development in Quebec, its relation with the Canadian Federation and the impact it had upon the modernization of Quebec Society in the last fifteen years. (A knowledge of French is required.)
Professor Roy
(of the French Canada Studies Centre)

101-405D THE HISTORY OF EUROPEAN THOUGHT SINCE THE RENAISSANCE. (6 credits). This course begins with the Renaissance and studies various trends in European thought down to the present time. It is conducted primarily by means of discussions based on extensive reading in the sources — Erasmus, Luther, Descartes, Voltaire, Goethe, Comte, Marx, Nietzsche, Ellul, Beckett, etc. — and seeks an empathic understanding of each thinker as well as a grasp of the historical context, and influence, of his thought.
Professor Hellman

101-407D TECHNOLOGY AND SOCIETY IN MEDIAEVAL AND MODERN EUROPE: A HISTORICAL SURVEY. (6 credits). The technological leadership of the East; the period of borrowing and advance in Europe, 12th-16th centuries; the expansion of Europe and its repercussion; technology as an instrument of power and welfare in 19th century Europe; the effects of the diffusion and adoption of European technology in the non-European world.
Professor Bayley

101-413D NATIONAL CONSCIOUSNESS AND RELIGION IN FRENCH CANADIAN LIFE AND SOCIETY. (6 credits; Prerequisite: History 202D or consent of instructor). *Not given in 1976-77.* An historical examination of the role and impact of "La race, la langue et la foi" in French Canadian history particularly in the 19th and 20th centuries. Special emphasis will be given to the study of the development of a national consciousness and of the living of it as seen through the political, social, economic and cultural evolution.
Professor LaPierre

101-414D GREAT BRITAIN: DEVELOPMENT OF THE WELFARE STATE. (6 credits; Prerequisite: History 204D or consent of the instructor). The course deals with economic conditions in the later 19th century; the growth of working class organization; Conservatism, Liberalism, Socialism, Imperialism; the origins of World War I; the economic and political effects of World War I; the origins and causes of World War II; post-war reconstruction.
Professor

101-418D PROBLEMS IN MODERNIZATION OF JAPAN. (6 credits; Prerequisite: History 208D or 318D, or consent of instructor). Political, social, ideological change, and war and diplomacy from the Imperial Restoration to the present.
Professor

101-420D FORMS OF PROTEST IN TRADITIONAL CHINA. (6 credits; Prerequisite: One prior course in Chinese history). *Not given in 1976-77.* An examination of the ideological and social roots and the forms of expression of protest in traditional China, at both the elite and popular levels. (This course will be given in alternate years).
Professor Laffey

101-428D CONTINUITY AND CHANGE IN TWENTIETH CENTURY CHINA. (6 credits; Prerequisite: History 308D or consent of instructor). *Not given in 1976-77.* Problems in the radical political and social transformation of China, as confronted and dealt with by twentieth-century revolutionary movements; particularly in the period from the May Fourth Movement to the present.
Professor Lin

101-430D FRANCE AND THE AFRICANS: A HISTORY OF THEIR RELATIONS FROM 1700 TO THE PRESENT. (6 credits; Prerequisite: An introductory course in either African or French history, and a reading knowledge of French.) *Not given in 1976-77.* An advanced study of the reciprocal nature of contacts between France and Africa south of the Sahara, the course will stress such topics as the slave trade, African resistance to French conquest, colonial rule and its legacy.
Professor Echenberg

101-435D GERMANY IN THE 20th CENTURY. (6 credits; Prerequisite: History 235D or consent of instructor). First World War: national and international aspects; another revolution arrested; unsolved problems; Weimar: economic crisis, frustrated energies, and nationalism; rise of Hitler; structure of the National Socialist state; blue-print for World Power; Second World War; attempts to overthrow Hitler; the revolt of conscience; defeat and division; the Cold War and the question of German unity; the two German states in the post-War era.
Professor

101-442D THE BEGINNINGS OF INDUSTRIAL SOCIETY IN CANADA. (6 credits; Prerequisite: History 202D or consent of instructor). Though focussed on Canada in the 19th century, this course will be a comparative one. It will examine Canadian society in reference to the British and American historical experience under certain themes such as population, economic growth, social structure, standard of living, technological and organizational diffusion, trade patterns and working class history.
Professor Rice

101-443B COMMUNICATIONS, SOCIETY, AND PUBLIC POLICY IN CANADA. (3 credits; Prerequisite: History 202D or consent of instructor). This course will be a study of the development of Canada's communication systems and its repercussions on the political, social and cultural life of Canadians.
Professor LaPierre

101-452D SOURCES OF CONFLICT IN CANADIAN HISTORY. (6 credits; Prerequisite: History 202D). *Not given in 1976-77.* A study of the effect of sectionalism, regionalism, separatism and ethnic problems upon Canadian development since 1867. Themes will include Maritimes' dissatisfaction, Western integration, the role and scope of "ethnic groups", religious divisions, the French Canadian presence, regional economic disparities and the impact of native peoples.
Professor LaPierre

101-458D PROBLEMS IN TRADITIONAL CHINESE HISTORY. (6 credits; Prerequisite: History 308D or the equivalent, or consent of the instructor.) Topic for 1976-77: Ch'ing China, 1644-1911. The last dynasty. Emphasis will be on the traditional social, intellectual and institutional patterns and on their adaptation and transformation after the Opium War (1840).
Professor Laffey

101-466B POLAND, CZECHOSLOVAKIA, AND THE USSR. (3 credits). Selected topics in Polish, Czech, and Soviet history. *Not given in 1976-77.*

101-484D THE COMING OF THE FIRST WORLD WAR. (Honours section of History 334D). (6 credits; Prerequisite: Any course in Modern European History). *Not given in 1976-77.*
Professor

101-485D CONTEMPORARY EUROPEAN HISTORY. (Honours section of History 315D). (6 credits; Prerequisite: Any course in European History).
Professor

HISTORY 101-417D, 471D - 474D, 477D, 481D - 483D, 486D, 488D, 489D, 490D, 491D, 493D - 497D. Honours Subjects and Seminars

101-001 HISTORY AND HISTORICAL STUDIES. (Non-credit optional series of lectures). A series of lectures by the members of the Department devoted to the place of history in the social sciences, the methodology of historical studies and the relation of history to the humanities and to the sciences. Lectures will be primarily designed for Upper year Honours students in History — but lectures will be open to interested students.
Members of the Department

Honours Seminars

101-417D SEMINAR: TRADITION AND CHANGE IN CHINA. (6 credits; Prerequisite: History 208D or 308D. Open only to East Asian Studies Honours students. History Honours students register under the course number 101-497D).
Professor Lin

101-471D SEMINAR: THE UNITED STATES IN AN AGE OF INDUSTRY, 1865-1910. (6 credits).
Professor Randall

101-472D SEMINAR: CANADA AND THE INTERNATIONAL ECONOMY. (6 credits). *Not given in 1976-77.*
Professor Rice

101-473D SEMINAR: CANADIAN HISTORY: ITS METHODOLOGY AND HISTORIOGRAPHY. (6 credits). *Not given in 1976-77.* A reading knowledge of French is essential.
Staff

101-474D SEMINAR: ENGLISH HISTORY, 1688 to 1870. (6 credits). *Not given in 1976-77.*
Professor Senior

101-477D SEMINAR IN JEWISH HISTORY. (6 credits). Topic for 1976-77: 'The Jewish Community'.

101-481D SEMINAR: UNITED STATES IN THE COLONIAL ERA. (6 credits). *Not given in 1976-77.*
Professor Riggs

101-482D SEMINAR: BRITISH RADICALISM AND LEFT-WING MOVEMENTS ON THE EUROPEAN CONTINENT. (6 credits).
Professor

101-483D SEMINAR: THE HISTORY OF MONTREAL. (6 credits; Prerequisites: History 202D and other courses on French Canada or consent of instructor).
Professor Young

101-486D SEMINAR: AFRICA AND THE TWO WORLD WARS. (6 credits). *Not given in 1976-77.*
Professor Echenberg

101-488D SEMINAR: MODERN FRENCH INTELLECTUAL HISTORY. (6 credits). *Not given in 1976-77.*
Professor Hellman

101-489D SEMINAR: PROBLEMS IN GERMAN HISTORY IN THE 20th CENTURY. (6 credits).
Professor

101-490D HONOURS TUTORIAL. (6 credits).

101-491D HONOURS TUTORIAL. (6 credits).

101-493D SEMINAR: TOPICS IN CANADIAN SOCIAL HISTORY. (6 credits).
Professor Miller

101-494D SEMINAR: POLITICAL AND SOCIAL IDEAS IN TUDOR AND STUART BRITAIN. (6 credits).
Professor Maxwell

101-495D SEMINAR: FRANCE DURING THE ANCIEN REGIME. (6 credits).
Professor Boulle

101-496D SEMINAR: REVOLUTIONARY MOVEMENT IN RUSSIA IN THE NINETEENTH CENTURY. (6 credits).
Professor Schlieper

101-497D SEMINAR: TRADITION AND CHANGE IN CHINA. (6 credits; Prerequisite: History 208D and 308D or consent of the instructor).
Professor Lin

HISTORY AND PHILOSOPHY OF SCIENCE PROGRAM

Co-ordinator: W.R. SHEA *(Philosophy)*
Co-ordinating Committee: PROF. DONALD G. BATES *(Medicine)*; PROF. VALENTIN BOSS *(History)*; PROF. MARIO BUNGE *(Philosophy)*; PROF. MAXWELL J. DUNBAR *(Marine Science)*; PROF. RAYMOND KLIBANSKY (Philosophy); PROF. ROLF SATTLER *(Biology)*; DR. PHILIP TEIGEN *(Osler Library)*.

Room 559, Bronfman Building
Tel.: 392-4517, 392-5149

History and Philosophy of Science at McGill is an interdisciplinary B.A. program that aims at providing students from the Faculties of Arts and Science with the opportunity of studying the development of science and discussing the nature of the scientific method and the impact of science and technology on society.

MAJOR PROGRAM

There is no prerequisite for admission into the Major program in History and Philosophy of Science. The program requires that the student take 30 credits in History and Philosophy of Science of which 3 must be "advanced courses" (400 level), and 24 credits in no more than three fields usually in the physical, biological, or social sciences to be determined with the program adviser.

All students who wish to Major in the History and Philosophy of Science must register with the Major's Advisers. Further information may be obtained from Prof. Valentin Boss (History), 392-5184 and Prof. William R. Shea (Philosophy), 392-4517.

HONOURS PROGRAM

Honours students are expected to take a minimum of 42 credits in History and Philosophy of Science. These must include 5 of the following courses: 107-220A, 107-221B, 107-324A, 107-325B, 107-504A, 107-505B, 107-590A, 107-591B, 101-239A, plus 2 tutorial seminars. Each student has the opportunity to construct within the Honours program a concentration focussed on a particular field of interest, such as The Scientific Revolution in the 17th Century. The Rise of the Mechanical Philosophy, Newtonian Science, Scientific Institutions in the 17th and 18th Centuries.

Students who wish to register in the Honours program should consult with Professor William R. Shea, (Philosophy) 392-4517, or Professor Valentin Boss (History) 392-5184.

COURSE DESCRIPTIONS

Biology

177-346A PHILOSOPHY OF BIOLOGY

177-347B HISTORY OF BIOLOGY *(Not given in 1976-77)*

History

101-239A HISTORY OF SCIENCE FROM BACON TO NEWTON AND LEIBNIZ

101-349A HEALTH AND THE HEALER IN THE HISTORY OF THE WEST

101-359B MEDICINE AND SOCIETY *(Not given in 1976-77)*

101-407D TECHNOLOGY AND SOCIETY IN MEDIEVAL AND MODERN EUROPE: A HISTORICAL SURVEY

Mathematics

189-338B TOPICS IN THE HISTORY AND PHILOSOPHY OF MATHEMATICS

Philosophy

107-220A INTRODUCTION TO HISTORY AND PHILOSOPHY OF SCIENCE, Part I

107-221B INTRODUCTION TO HISTORY AND PHILOSOPHY OF SCIENCE, Part II.

107-321D PHILOSOPHY OF SCIENCE *(Not given in 1976-77)*

107-322D METHOD AND METAPHYSICS IN THE SCIENTIFIC REVOLUTION *(Not given in 1976-77)*

107-324A PHILOSOPHY OF SOCIAL SCIENCE I

107-325B PHILOSOPHY OF SOCIAL SCIENCE II

107-504A PROBLEMS IN SEMANTICS I

107-505B PROBLEMS IN SEMANTICS II

107-526D SCIENCE AND PHILOSOPHY IN THE 17TH CENTURY *(Not given in 1976-77)*

107-590A SEMINAR IN PHILOSOPHY

107-591B SEMINAR IN PHILOSOPHY

107-498A, B TUTORIALS

107-499D TUTORIALS

Psychology

204-403A MODERN PSYCHOLOGY IN HISTORICAL PERSPECTIVE

Religion

260-340B RELIGION AND THE SCIENCES *(Not given in 1976-77)*

Sociology

166-225B MEDICINE AND HEALTH IN MODERN SOCIETY

166-235A TECHNOLOGY AND SOCIETY

HUMANISTIC STUDIES

Adviser: Professor Szanto,
Department of Comparative Literature
3495 Peel St.,
Telephone 392-5452

18 credits in one language (Latin, Greek, German, Italian, Russian, Spanish); 6 credits in Social Science; 30 credits in no more than three humanities departments (languages other than one already chosen, Philosophy, English, French, History, Jewish Studies, Music, and Religion).

INDUSTRIAL RELATIONS STUDIES PROGRAM

The Industrial Relations Major is designed for the undergraduate student who wishes to earn a B.A. degree with a concentration of courses chosen from various disciplines that are related to Industrial Relations. The main economic and social forces which affect the employer-employee relationship are examined in a theoretical and practical setting. The student can choose from a wide range of courses in deciding how he or she will constitute the program, being able to concentrate to an extent in the area of industrial relations which interests him or her. The Faculty of Management offers a similar Major, leading to the B. Com. degree.

Note: Changes are currently being made in this program. See an Adviser for a complete Program Description.

Advisers: Sociology Option — Dr. William A. Westley, Room 513, Bronfman Building, 392-3075.*Economics Option* — S. Ingerman, 419 Leacock Bldg., 392-5238 — L. Soderstrom, 427 Leacock Bldg., 392-5234.

General Office, Room 514
Samuel Bronfman Building,
Telephone: 392-3077

Industrial Relations majors must choose either the Economics or the Sociology option.

SOCIOLOGY OPTION

Economics: 154-200D
Management: 279-294A or B, 279-491D, 279-492D
**Sociology:* 166-235B, 166-312B, 166-223B, 350A, 411A, 417B, 420D, 463B

ECONOMICS OPTION

Economics: 154-200D, 154-306D, 154-317D, 154-426D
Management: 279-294A or B, 279-491D, 279-492D
**Sociology:* 166-312B, 166-235B

In addition to the required courses listed above nine (9) credits must be selected by students in both streams from the options listed below:

History: 101-202A, 203B, 221B or 331D, 363D, 403D
Political Science: 160-320A, 321B, 325D, 327A, 337B
Economics: 154-321D, 426D, 306D
**Sociology:* 166-230B, 353A, 337B, 410A, 235B, 312B, 350A, 463B, 417B, 420D, 411A, 223B
Management: 279-393A, 394B, 493B, 278-688B
Labour Law: 495-369A

**Sociology: 166-210A is a prerequisite to all Sociology courses. If a student has not taken it, it can be taken as an Arts option towards the B.A. but not as part of the Major Requirements.

COURSE DESCRIPTIONS (Management)

279-294A,B INTRODUCTION TO INDUSTRIAL RELATIONS. (3 credits). An introduction to the problems of labour-management relations, the structure, function and government of labour unions, labour legislation, the collective bargaining process, and the public interest in industrial relations.
Professor Bairstow

279-394B COLLECTIVE BARGAINING. (3 credits). This course is designed for those students who wish to study the principles of collective bargaining in Canada and abroad. It deals with the structure of the bargaining parties and the structure of bargaining itself. It is problem oriented and relies heavily on empirical data and case problems.
Professor Bairstow

279-491D INDUSTRIAL RELATIONS IN PRACTICE. (6 credits). The object of this course is to give the students an opportunity to apply the knowledge that they have gained in their Industrial Relations Program. Students in this course will be encouraged to come to grips with a wide range of problems in industrial relations theory, policy and practice. This is achieved by means of guided reading and small discussion groups, mock collective bargaining sessions, contact with practioners in the field and problem-oriented research assignments. (Compulsory for Final Year Industrial Relations Majors. Others by permission of the instructor.)
Professor Goldenberg

279-492D PUBLIC POLICY IN INDUSTRIAL RELATIONS. (6 credits). Collective bargaining and public policy towards Industrial Relations. Emphasis is placed on recent public investigations into labour relations in the federal and provincial jurisdictions. International comparisons are included.
Professor Woods

278-688B LABOUR RELATIONS IN THE PUBLIC SECTOR. (3 credits). This course covers labour relations in a broad area of public services, federal, provincial, and municipal, as well as in the so-called quasi-public services' such as hospitals, schools and government agencies and boards. Students will be encouraged to come to grips with some of the more contentious current issues in public service labour relations and compare and analyse the alternative methods that have so far been evolved to deal with them. This course is open to MBA II students who have completed 272-627A (Collective

Bargaining) and to final year undergraduate students majoring in Industrial Relations. Others by permission of the instructor.
Professor Goldenberg

ITALIAN (132)

Professor — ANTONIO D'ANDREA *(Chairman)*
Associate Professors — MICHELANGELO PICONE, PAMELA D. STEWART
Assistant Professor — ENRICA ROSSETTI
Lecturer — ANGELA SACCONAGHI
Sessional Lecturer — CARMELA MINDEL

Samuel Bronfman Building, Room 637; *General Telephone Number:* 392-4567

MAJOR IN ITALIAN

30 credits to be chosen from the following: Italian 230D, 240D, 251A, 252B, 301A, 302B, 341A, 342B, 351A, 352B, 401A, 402B, 451A, 452B, 461A, 462B, 464B;

12 credits: 2 compulsory courses, Italian 360D and 470D;

12 other credits in Arts or Social Sciences subjects chosen in consultation with the Department.

Prerequisites: see under individual courses.

Adviser: Professor P.D. Stewart, Samuel Bronfman Building, Room 637-A, 392-4567.

HONOURS IN ITALIAN

Admission to the Honours program in Italian requires departmental approval. Students wishing to register in the program should consult with the Department as early as possible.

Students may begin Honours in Italian in the Second year, instead of the First year, if in the opinion of the Department they are found qualified to do so.

Courses required: 36 credits to be chosen from the following: Italian 230D, 240D, 251A, 252B, 301A, 302B, 341A, 342B, 351A, 352B, 401A, 402B, 451A, 452B, 461A, 462B, 464B;

12 credits: 2 compulsory courses, Italian 360D and 470D;

6 credits: 1 compulsory tutorial, Italian 490D.

A minimum mark of 65% is required in each of the above listed courses.

Prerequisites: see under individual courses.

Adviser: Professor P. D. Stewart, Samuel Bronfman Building, Room 637-A, 392-4567.

JOINT HONOURS

Students may combine Honours in Italian with Honours in any one of the following subjects: English, French, German, Latin, Linguistics, Philosophy, Russian, Spanish. Admission to Joint Honours requires departmental approval. Students wishing to register in the program should consult with the Department as early as possible.

Students may register for Joint Honours in the Second year, instead of the First year, if in the opinion of the Departments they are found qualified to do so.

Italian courses required: 36 credits to be chosen from the following: 230D, 240D, 251A, 252B, 301A, 302B, 341A, 342B, 351A, 352B, 360D, 401A, 402B, 451A, 452B, 461A, 462B, 464B, 470D.

A minimum mark of 65% is required in each of the above listed courses.

Prerequisites: see under individual courses.

Adviser: Professor P. D. Stewart, Samuel Bronfman Building, Room 637-A, 392-4567.

COURSE DESCRIPTIONS

Two sets of courses are offered by the Department:

a) Italian 132-200D, 205D, 210D, 215D, 230D, 240D, 251A, 252B, 301A, 302B, 341A, 342B, 351A, 352B, 360D, 401A, 402B, 451A, 452B, 461A, 462B, 464B, 470D, 490D: courses intended for students wishing to learn, or improve their knowledge of the language, and to study Italian literature in the original;

b) Italian 132-225D, 325A and 326B: courses on Italian literature given in English; Italian authors will be read in the original or in translation as preferred by students; knowledge of the Italian language is not required.

132-200D ITALIAN LANGUAGE INTENSIVE. (12 credits; *Texts:* D'Andrea & Stewart, *Il manuale italiano; Mondadori's Pocket Dictionary;* Pratolini, *Il quartiere:* Mondadori; Soldati, *Il vero Silvestri:* Oscar Mondadori; Ginzburg, *Valentino:* Einaudi; D'Andrea & Stewart, *Antologia italiana).* For *students who have had no opportunity to acquire any knowledge of Italian.* Intensive language course, covering the first two levels in one year rather than the usual two.
Miss Sacconaghi

132-205D ITALIAN LANGUAGE FOR BEGINNERS. (6 credits; 3 hours and laboratory; *Texts:* D'Andrea & Stewart, *Il manuale italiano; Mondadori's Pocket Dictionary;* Ginzburg, *Valentino:* Einaudi). Grammar, reading, dictation. Intensive practice in speech patterns and written structures. Conversation and composition. Visual material and selected readings will be used in describing the making of contemporary Italy. Opportunity for extra practice in Italian conversation is provided by the Department.
Staff

132-210D ITALIAN LANGUAGE AND CIVILIZATION. (9 credits; 5 hours; Prerequisites: Permission of the Department, *Texts:* D'Andrea & Stewart, *Il manuale italiano;* D'Andrea & Stewart, *Antologia italiana;* Pacifici, *Italia: vita e cultura:* Random House; Soldati, *Il vero Silvestri:* Oscar Mondadori; Pratolini, *Il quartiere:* Mondadori). Grammar, reading, conversation and composition. An outline of italian civilization. This course is intended to enable students who have no formal grounding in the Italian language, to obtain in one year the same level of

competence as students who have taken CEGEP Intermediate Italian.
Miss Sacconaghi

132-215D INTRODUCTION TO ITALIAN LITERATURE. GRAMMAR. CONVERSATION, AND FREE COMPOSITION. (6 credits; Prerequisite: Italian 205D or the equivalent; *Texts:* D'Andrea & Stewart, *Il manuale italiano;* D'Andrea & Stewart, *Antologia italiana; Dizionario Garzanti della lingua italiana;* Sansone, *Storia della letteratura italiana:* Principato; Moravia, *Gli indifferenti:* Bompiani; Pratolini, *Il quartiere:* Mondadori; Soldati, *Il vero Silvestri:* Oscar Mondadori). A survey of Italian literature with special emphasis on some aspects of the Italian Novel. Reading of selected works and group discussion.
Staff

132-225D MAIN TRENDS AND MAJOR WRITERS OF ITALIAN LITERATURE. (6 credits; 1 lecture hour and 2 conference hours). *Not given in 1976-77.* Lectures are given in English. Readings in Italian or in translation, as preferred by students. This course is intended to give students, whether they know Italian or not, an insight into the main problems of the Italian literary tradition.
Professor D'Andrea & Staff

132-230D SURVEY OF ITALIAN LITERATURE. (6 credits; Prerequisite: CEGEP Intermediate Italian, or permission of the Department; *Texts:* D'Andrea & Stewart, *Il manuale italiano,* D'Andrea & Stewart, *Antologia italiana; Dizionario Garzanti della lingua italiana;* Calvino, *Il barone rampante:* Einaudi; Jovine, *Signora Ava:* Einaudi; Marchese, *Panorama:* La Nuova Italia; Sansone, *Storia della letteratura italiana:* Principato). Readings from representative works of Italian literature; special emphasis on the nineteenth and twentieth centuries.
Professor Rossetti

132-240D MANZONI AND THE ITALIAN LITERATURE OF THE "RISORGIMENTO". (6 credits; Prerequisite: CEGEP Intermediate Italian, or permission of the Department; *Texts: Dizionario Garzanti della lingua italiana;* Manzoni, *I Promessi Sposi:* Laterza; Nievo, *Le confessioni di un Italiano:* Petrini; Sansone, *Storia della letteratura italiana:* Principato). The Italian Romantic movement and its social and political background. The intellectual life of Alessandro Manzoni as reflected in his novel, *I Promessi Sposi.*
Professors Picone and Rossetti

132-251A THE "COMMEDIA DELL'ARTE". (3 credits; Prerequisite: CEGEP Intermediate Italian, or permission of the Department; *Texts: Dizionario Garzanti della lingua italiana;* D'Amico, *Storia del teatro drammatico:* Garzanti; D'Andrea & Stewart, *Antologia italiana).* Playhouses, actors, stage techniques, masks and scenarios of the "Commedia dell'arte."
Professor Stewart

132-252B ITALIAN DRAMA FROM GOLDONI TO PIRANDELLO. (3 credits; Prerequisite: Italian 251A, or permission of the Department; *Texts: Dizionario Garzanti della lingua italiana;* D'Amico, *Storia del teatro drammatico:* Garzanti; Goldoni, *Il Teatro Comico, La Bottega del Caffè, Il Bugiardo, La Locandiera, I Rusteghi, Il Ventaglio:* Signorelli; Pirandello, *Sei Personaggi in cerca d'autore, Enrico IV:* Mondadori). A study of drama in Italy from the eighteenth to the twentieth century, with emphasis on Goldoni and Pirandello.
Professor Stewart

132-301A LEOPARDI AND THE ITALIAN POETRY OF THE 19th CENTURY. (3 credits; Prerequisite: Italian 230D, 240D, 251A or 252B, or permission of the Department). Readings from Leopardi's *Canti* and from representative works of other nineteenth-century poets.
Professor Picone

132-302B CONTEMPORARY ITALIAN PROSE. (3 credits; Prerequisite: Italian 230D, 240D, 251A or 252B, or permission of the Department). *Not given in 1976-77.* Italian novelists, playwrights, diarists, and essayists from 1945 to the present in the context of the Italian post-war society.
Professor Picone

132-325A DANTE AND THE MIDDLE AGES. (3 credits; Prerequisite: Italian 225D, or permission of the Department). *Not given in 1976-77.* Lectures are given in English. Readings in Italian or in translation, as preferred by students. Students are not required to take language courses as prerequisites. Special emphasis will be placed on the history of ideas and on the cultural contacts of Italy with England and France during the Middle Ages.
Professor D'Andrea & Staff

132-326B THE RENAISSANCE: PETRARCH, BOCCACCIO, AND MACHIAVELLI. (3 credits; Prerequisite: Italian 225D, or permission of the Department). *Not given in 1976-77.* Lectures are given in English. Readings in Italian or in translation, as preferred by students. Students are not required to take language courses as prerequisites. Special emphasis will be placed on the history of ideas and on the cultural contacts of Italy with England and France during the Renaissance.
Professor D'Andrea & Staff

132-341A STRUCTURE OF THE ITALIAN LANGUAGE. (3 credits; Prerequisite: Italian 230D, 240D, 251A or 252B, or permission of the Department). A description of the main phonological, morphological and syntactic aspects of the Italian language.
Professor Picone

132-342B HISTORY OF THE ITALIAN LANGUAGE. (3 credits; Prerequisite: Italian 341A, or permission of the Department). An outline of the history of language from its origins to modern times, with special emphasis on prose.
Professor Picone

132-351A ARIOSTO'S ORLANDO FURIOSO. (3 credits; Prerequisite: Italian 230D, 240D, 251A or 252B, or permission of the Department.) The chivalresque genre and the courtly life of the Renaissance. Readings from Pulci's *Morgante,* Boiardo's *Orlando innamorato,* Castiglione's *Cortegiano,* and from the *Orlando Furioso.*
Professor Stewart

132-352B FROM THE RENAISSANCE TO THE BAROQUE AGE: TASSO: THE ITALIAN PROSE FROM THE LATE 16th TO THE EARLY 18th CENTURY. (3 credits; Prerequisite: Italian 351A, or permission of the Department). The crisis of the Italian Renaissance and Tasso's *Gerusalemme Liberata.* Literary criticism; erudition; scientific and philosophical prose from Galilei to Vico.
Professor Stewart

132-360D SEMINAR ON ITALIAN STYLISTICS AND COMPOSITION. (6 credits; 2 lecture hours per week and report on special assignment; Prerequisite: Permission of the Department). Intensive practice in stylistics and composition, with special emphasis on literary style. Seminar discussions on exercises and papers submitted by the students. Oral dissertations on various subjects, mainly of a literary character, prepared and delivered by students.
Miss Sacconaghi

132-401A VERGA AND THE "VERISMO". (3 credits; Prerequisites: Italian 230D, 240D, 251A or 252B, or permission of the Department). *Not given in 1976-77.* The realistic movement in Italian narrative prose (end of the 19th and beginning of the 20th century), with special emphasis on the novels and short stories of its main representative, Giovanni Verga.
Professor Rossetti

132-402B MODERN ITALIAN LITERATURE. (3 credits; Prerequisite: Italian 401A, or permission of the Department). A study of representative works of major Italian twentieth-century authors.
Professor Picone

132-451A BOCCACCIO AND THE ITALIAN NOVELLA. (3 credits, Prerequisite: Italian 230D, 240D, 251A or 252B, or permission of the Department). *Not given in 1976-77.* A study of Boccaccio's *Decameron* and of the Italian narrative prose up to the sixteenth century.
Professor Stewart

132-452B THE ITALIAN DRAMA OF THE RENAISSANCE. (3 credits; Prerequisite: Italian 451A, or permission of the Department). *Not given in 1976-77.* The role of Humanism in the revival of Drama. Secular and religious festivals. The audience and the stage. Representative works of the major playwrights.
Professor Stewart

132-461A DANTE: THE DIVINE COMEDY. (3 credits; Prerequisites: Italian 230D, 240D, 251A or 252B, or the equivalent, and permission of the Department). The structure and intellectual background of the *Divine Comedy:* a reading and interpretation of the poem; a discussion of the main trends in contemporary Dante scholarship.
Professor D'Andrea

132-462B PETRARCH AND PETRARCHISM. (3 credits; Prerequisites: Italian 230D, 240D, 251A or 252B, or the equivalent, and permission of the Department.) Petrarch's life, his temperament, his works; a reading and interpretation of his lyrical poetry; an account of his influence as a lyric poet in Italy and abroad.
Professor D'Andrea

132-464B MACHIAVELLI: THE PRINCE. (3 credits; Prerequisites: Italian 230D, 240D, 251A or 252B, or the equivalent, and permission of the Department). *Not given in 1976-77.* An analysis of the text of *The Prince.* Selected readings from Machiavelli's other works.
Professor D'Andrea

132-470D SEMINAR ON ITALIAN LITERATURE. (6 credits; 2 lecture hours per week and report on special assignment; Prerequisite: permission of the Department). Students will be assigned a reading program designed to integrate their knowledge of Italian literature, and will be required to take part in weekly seminar discussions with Staff members.
Professor D'Andrea & Staff

132-490D TUTORIAL. (6 credits; Prerequisite: For U3 Honours students only). Every student will be entrusted to a Tutor. The Tutor will meet the student regularly during the term to discuss special assignments (readings, essays, etc.)
Staff

JEWISH STUDIES PROGRAM (135)

Professors — HARRY M. BRACKEN; RICHARD H. POPKIN
Associate Professor — RUTH WISSE *(Chairman)*
Assistant Professors — SEYMOUR EPSTEIN, WARREN HARVEY; LAWRENCE KAPLAN; BARRY LEVY; YEHUDI LINDEMAN; EUGENE ORENSTEIN
Lecturer — SHIMON LEVY
Sessional Lecturers — L. TENCER

3511 Peel Street, Room 103, telephone 392-5969

The Jewish Studies Program of McGill University, established in 1968, offers an interdisciplinary approach to Jewish learning at the undergraduate level. The aims of the Program include:

— Providing a selection of courses which will enable the student not majoring in Jewish Studies to broaden his or her knowledge of Jewish history and culture;
— Providing specialized courses in the various disciplines that comprise Jewish Studies for the student who has specific academic interests;

— Providing comprehensive undergraduate majors and honours programs, culminating in advanced seminars and tutorials for students contemplating careers in the various and ramified fields of Judaica. The Honours program in Jewish Studies will give the student the necessary linguistic, textual and bibliographical; knowledge to enable him or her to pursue graduate work in Jewish Studies.

The Program consists of courses in Hebrew and Yiddish language and literature, complemented by courses in Jewish history and philosophy offered in their respective departments. Offerings currently include complete language sequences in both Hebrew and Yiddish, as well as advanced courses in Hebrew literature — Rabbinic, Medieval and Modern — and Yiddish literature. Some of the advanced courses involve textual studies requiring a knowledge of the original languages; others are intended for students unacquainted with the languages. Many of the courses in the Jewish Studies Program are cross-listed with those offered by other departments viz. History, Philosophy, Comparative Literature; these courses are credited towards the Major or Honours program.

Although the Jewish Studies Program at McGill is multifaceted, treating many of the most significant areas of Judaica, our major focus, we hope, will be on the modern period, emerging from an intensive interdisciplinary study of 19th and 20th Century Hebrew and Yiddish literature and intellectual and social history. Consonant with this orientation, the establishment of an M.A. program in comparative Hebrew and Yiddish literature is projected in the near future.

MAJOR IN JEWISH STUDIES

A major in Jewish Studies is composed of nine Jewish Studies courses, including at least one Jewish language completed after three years of instruction. In addition, at least two of the nine courses should be taken within the Program's offerings in Philosophy, History, and Religious Studies. A student who meets the third year language requirement in one Jewish language may submit the first year of the second Jewish language towards the nine course total.

HONOURS IN JEWISH STUDIES

A B.A. (Honours) in Jewish Studies is composed of eleven courses within the Program's offerings. The student will take three full courses in Hebrew (given in Hebrew) in at least the third year of instruction. In addition, the student will take at least two courses in Jewish history (History 207D is required), at least one course in Jewish philosophy, and also *at least* one tutorial or seminar course in Hebrew, Yiddish, Jewish History or Jewish Philosophy. A student who meets the third year language requirement in Hebrew may submit the first year of Yiddish towards the eleven course total. In addition to the requirement for the Honours B.A. degree, Honours in Jewish Studies requires (a) a grade of at least B in every Jewish Studies course and (b) a senior thesis in some phase of Jewish Studies prepared under the direction of a staff member.

Honours/Major Adviser: Professor Warren Harvey 392-4517

JEWISH TEACHER TRAINING PROGRAM

This program was established in 1973 in the Faculty of Education in conjunction with the Jewish Studies Program. The goal is to train teachers of Jewish Studies for the elementary and secondary school levels through exposure to educational theory and methodology and courses in Jewish Studies. A B.Ed. with Jewish Studies as a specialization is available. In addition, a B.A. (Jewish Studies major) may be pursued under the guidance of the Jewish Teacher Training Program with a view to completion of a Jewish Studies diploma program in the Faculty of Education.

Further information may be obtained by contacting the Director, Professor Seymour Epstein at 392-8257.

COURSE DESCRIPTIONS

NOTE: * denotes a course NOT being offered in 1976-77.

A) Courses offered by the Jewish Studies Program (according to subject matter)

i) Hebrew Language and Literature

135-220D INTRODUCTORY HEBREW (6 credits).
Staff

* **135-312A INTRODUCTION TO HEBREW LITERATURE, PRE 1948 (In translation).** (3 credits). Survey of Hebrew literature in translation — drama, poetry, and prose (short stories and novels) reflecting the political, cultural and social problems of Hebrew letters. This term will cover the Biblical period to the establishment of the State of Israel.
Professor S. Levy

* **135-313B INTRODUCTION TO HEBREW LITERATURE, POST -1948 (In translation).** (3 credits; Prerequisite: 135-312A or permission of instructor). A continuation of 135-312A, this term will cover the period from 1948-1975.
Professor S. Levy

135-320D INTERMEDIATE HEWBREW. (6 credits).
Staff

135-340D ADVANCED HEBREW. (6 credits; Prerequisite: Hebrew 320D or its equivalent). A study of Hebrew using theatrical and/or radio productions as texts. Productions of the material may be scheduled.
Professor S. Levy

* **135-410D THE IMAGE OF THE ISRAELI IN MODERN HEBREW LITERATURE (In translation).** (6 credits). The course will deal with the transition of the Israeli from the two-dimensional treatment in earlier Hebrew literature to the more recent three dimensional characterization of the subject. Basic themes will include the attitude of the Israeli towards Diaspora Jewry, Jewish religion, Israel as a state, its ideologies, etc.
Professor S. Levy

135-411D MODERN HEBREW DRAMA (In translation). (6 credits). Theatre, a relatively recent phenomenon in Jewish culture, bears the tension engendered by the quest for an authentic national idiom and the desire to integrate with contemporary developments in Western theatre and culture. (Not open to students who have taken 135-420D).
Professor S. Levy

* **135-421D HEBREW LITERATURE IN THE ISLAMIC WORLD.** (6 credits: Prerequisite: Hebrew 340D or permission of instructor). Through the reading of the original Hebrew texts, the student will be introduced to the civilization of the Jews in the Islamic world and the cultural relationships between the Jews and Arabs in the period 500-1500 A.D.

135-436A TUTORIAL IN HEBREW LITERATURE. (3 credits; Prerequisite: Third year Hebrew or permission of instructor). Topic for Fall 1976: *A Monographic Study on S.Y. Agnon.*
Professor S. Levy

135-437B TUTORIAL IN HEBREW LITERATURE. (3 credits; Prerequisite: Third year Hebrew or permission of instructor). Topic for Winter 1977: *The Modern Hebrew Short Story*
Professor S. Levy

ii) Yiddish Language and Literature

135-280D INTRODUCTORY YIDDISH. (6 credits; 1 laboratory period). Concentrated introduction to spoken and written Yiddish. Selected readings in Yiddish literature.
Mr. Tencer

* **135-360D MODERN YIDDISH PROSE.** (6 credits). Treats the development of Yiddish prose and poetry from 1864 to the present. Lectures and readings in English.
Professor Wisse

135-380D INTERMEDIATE YIDDISH. (6 credits; Prerequisite: 135-280D or permission of instructor). This course is designed to develop the student's language skills upon completion of the text *College Yiddish* (Vol. 1). Selected texts reflecting the development of American Yiddish literature will be studied. Themes will be set for composition in Yiddish to improve the student's grasp of proper usage and style.
Professor Orenstein

* **135-381D YIDDISH LITERATURE.** (6 credits; Prerequisite: Reading knowledge of Yiddish). The course will treat the development of the Yiddish short story in the 19th and 20th centuries.
Professor Wisse

135-382D YIDDISH POETRY. (6 credits; Prerequisite: Reading knowledge of Yiddish). A survey of Yiddish poetry in the 19th and 20th centuries: Poland, Russia, Galicia, America, and Israel.
Professor Wisse

135-487A/488B TUTORIAL IN YIDDISH LITERATURE. (3 credits; Prerequisite: Third year Yiddish or permission of instructor). Topic for 1976-77: *Expressionism in Yiddish literature focusing on Soviet and Polish Yiddish literature, 1918 to the Holocaust.*
Professor Orenstein

iii) Biblical Studies

135-211A JEWISH STUDIES I: THE BIBLICAL PERIOD. (3 credits). The history, literature and beliefs of Judaism's formative period. Both Biblical and non-Biblical materials will be studied. The Bible will be approached in the context of cognate literatures of the Ancient Near East; non-Biblical documents will be analyzed for their bearing on the Jewish tradition. All texts will be read in English.

NOTE: Students who have previously taken 135-201D may not take this course for credit.
Professor B. Levy

135-323A THE BOOK OF EXODUS. (3 credits; Prerequisite: A reading knowledge of Biblical Hebrew). Narratives and laws in the light of cognate data from the Ancient Near East. Bible text in Hebrew; other documents in English.
Professor B. Levy

135-324B GENESIS AND ITS INTERPRETATION. (3 credits; Prerequisite: A reading knowledge of Biblical Hebrew). The Book of Genesis and its interpretation in late Antiquity. Readings will be taken from the Bible and Jubilees, Josephus, Philo, Pseudo-Philo, Dead Sea Scrolls, the Talmud, ancient translations, midrashim, etc. Hebrew texts will be read in Hebrew, others in translation.
Professor B. Levy

* **135-334A INTRODUCTION TO BIBLICAL TEXTS I.** (3 credits). Detailed number of Biblical texts will be carefully examined and analyzed. In Hebrew. (Not open to students who have taken 135-343D).
Professor B. Levy

* **135-335B INTRODUCTION TO BIBLICAL TEXTS II.** (3 credits; Prerequisite: 135-334A or permission of instructor). 135-335B is a continuation of 135-334A. In Hebrew. (Not open to students who have taken 135-343D).
Professor B. Levy

135-428A JEWISH INTERPRETATION OF THE BIBLE. (3 credits; Prerequisite: Fluency in Post-Biblical Hebrew). A survey of the techniques, trends,

and issues of Biblical interpretation from ancient times to the present.
Professor B. Levy

135-429B BIBLICAL POETRY. (3 credits; Prerequisite: Fleuncy in Biblical Hebrew). A detailed text study emphasizing the role of ancient Semitic languages for understanding the philological and stylistic aspects of the materials.
Professor B. Levy

iv) Post-Biblical and Rabbinic Literature

135-212B JEWISH STUDIES II: THE TALMUDIC PERIOD. (3 credits; Prerequisite: 135-211A is recommended). The history, literature, and intellectual developments in Judaism during late antiquity. Special emphasis will be placed on rabbinic literature e.g. Babylonian Talmud, Palestinian Talmud, the midrashim both as literary works and for the light they shed on the events and ideologies of the period. All texts and discussions will be in English.
Professor Kaplan

* **135-301D LITERATURE OF THE SECOND COMMONWEALTH AND TALMUDIC PERIODS.** (6 credits). A study of classic post-Biblical texts. First term: Midrash, Mishnah and Talmud. Second term: historical and sectarian works: Apocrypha, Philo, Josephus, Dead Sea Scrolls. Lectures and readings in English.
Professor Kaplan

* **135-309D THE IDEA OF THE JEWISH PEOPLE.** (6 credits). The history and significance of "peoplehood" in Judaism from the Biblical Period until the French Revolution. The focii of the course will be (a) the meaning of the concept in Jewish thought and (b) the political structures that evolved from it.

135-311A HISTORY OF JEWISH MESSIANISM. (3 credits). The course will cover Messianic thought from the Rabbinic period until Sabbetai Zevi, dealing with messianic speculation in rabbinic literature, medieval biblical exegesis, Jewish philosophy and mysticism, messianic movements in rabbinic times to the Middle Ages. Readings and discussions in English (Not open to students who have taken 135-311D).
Professor Kaplan

* **135-316A SOCIAL AND ETHICAL ISSUES IN JEWISH LAW I.** (3 credits). First term will deal with the introduction, nature and history of Jewish law. Specific issues are law and morality, abortion, self-incrimination and ecology. In English.
Professor Kaplan

* **135-317B SOCIAL AND ETHICAL ISSUES IN JEWISH LAW II.** (3 credits; Prerequisite: 135-316A or permission of instructor). A continuation of 135-316A, this term will deal with political issues: war and peace, collaboration with tyranny, civil disobedience; and individual vs. community. In English.
Professor Kaplan

135-319B JUDAISM AND THE OCCULT. (3 credits). Popular and deviant elements which have at various times been integrated into Judaism will be studied. The interaction of magic and religion will be analyzed through the study of Jewish texts from both the authoritative religious literature as well as from sources on the periphery of classical Judaism. Readings and discussions in English.
Professor B. Levy

135-345D INTRODUCTION TO RABBINIC LITERATURE. (6 credits). An introduction to the study of rabbinic texts (Tannaitic and Amoraic) in the original. Both conceptual analysis and critical method will be stressed. The course is given in Hebrew and may be taken as an alternative to Hebrew 340D.
Professor Kaplan

* **135-403D MAJOR IDEAS AND MOTIFS OF CLASSICAL JUDAISM.** (6 credits; Prerequisite Hebrew 301D or Hebrew 345D or permission of instructor). First term: basic motifs and values of rabbinic thought; God, man, and peoplehood. Second term: the basis, function and scope of rabbinic ethics: law, justice, and community. Lectures and readings in English.
Professor Kaplan

135-430A TUTORIAL IN HEBREW LITERATURE. (3 credits; Prerequisite: Third year Hebrew or permission of instructor). Topic for Fall 1976: *Medieval Jewish Interpretation of Biblical Law.*
Professor Kaplan

135-431B TUTORIAL IN HEBREW LITERATURE. (3 credits; Prerequisite: Third year Hebrew or permission of instructor). Topic for Winter 1977: *Traditional Biblical Exegesis in the Modern Era c. 1750-1930.*
Professor Kaplan

v) Jewish Studies

* **135-351A STUDIES IN MODERN JEWISH FICTION.** (3 credits). Emphasis on North American authors but some others will be included. Attention will be given to historical background with part of the emphasis on the social and political position of the Jews since the early 19th century. Authors to be included: A.M. Klein, I.B. Singer, and Elie Wiesel among others.
Professor Lindeman

135-354A INTERDISCIPLINARY LECTURES IN JEWISH STUDIES. (3 credits). Topic for Fall 1976: *An Introduction to Judaism* Lectures will be given by members of the Jewish Studies Program in their several disciplines. The course will combine both an historical and a thematic approach. Topics to be discussed include: Jewish conceptions of God, the centrality of the Torah law, celebrations and holiness, Zion, the religious significance of the Jewish people, problems of modernization. Students are free to concentrate in the area of their choice. In English.

N.B. 135-354A will not be credited towards the Jewish Studies major or honour program.
Staff

135-357B INTERDISCIPLINARY LECTURES IN JEWISH STUDIES. (3 credits). Topic for Winter 1977: *Israel among the Nations.* Lectures will be given by members of the Jewish Studies Program in their several disciplines. The course will focus on the interaction between Jewish and world cultures from biblical to modern times. It will address and, hopefully, serve to answer the question: to what extent is there a distinctive Jewish culture? Students are free to concentrate in the area of their choice. In English.
Staff

* **135-356D JEWISH LABOUR MOVEMENT.** (6 credits). This course treats the development of the Jewish Labour Movement both in Eastern Europe and North America from the last quarter of the 19th century to the Bolshevik Revolution. Special emphasis is given to the problem of nationalism and cosmopolitanism within the Jewish Labour Movement and to the movement's influence on secular Jewish culture.
Professor Orenstein

* **135-362D THE SHTETL.** (6 credits). Using historical, sociological, literary, and cultural sources, this course will examine various aspects of communal and individual life in the *shtetl,* the Jewish — or largely Jewish — town in Eastern Europe. Readings and discussion in English.
Professor Wisse

135-363A THE SHTETL UPROOTED: 1881-1924. The Cultural and Social Adaptation of East European Jews in America. (3 credits). This course will focus on the tensions of Jewish settlement that found expression in dynamic social movements and in vital literary and cultural experimentation. Readings and discussion in English.
Professors Wisse and Orenstein

135-364B THE SHTETL UPROOTED: 1924-1939. The Cultural and Social Adaptation of East European Jews in America. (3 credits; Prerequisite: 135-363A or permission of instructor). This term will cover the period of communal consolidation and the decisive impact of integration on American-Jewish culture and American society. Readings and discussion in English.
Professors Wisse and Orenstein

B) Courses offered by the Jewish Studies Program and the Department of History

101-207D A HISTORY OF THE JEWS FROM LATE CLASSICAL TIME TO THE PRESENT. (6 credits; Prerequisite: History 105D possibly concurrently is recommended). A general introductory level survey of the history of the Jewish people from late classical times to the present in the context of general world history. Emphasis will be placed on general trends and developments and special attention will be paid to areas of major Jewish settlements. The first term will deal with the period up to 1492, while the second term will cover the period from 1492 to the present.
Professor Hundert

101-307D THE HISTORY OF THE JEWS IN POLAND c. 1100-1945. (6 credits; Prerequisite: History 207D or permission of instructor). The course will include analysis of primary sources (in translation) related especially to the social, economic and institutional history of the Jews in Poland and their place in the East European Jewish community. Topics to be discussed: the Jews during "The Flood" (1648-1667), the communal crisis of the late 17th century, the Frankist movement, and Hasidism.
Professor Hundert

101-477D SEMINAR: JEWISH HISTORY. (6 credits). Topic for 1976-77: The Jewish Community.
Professor Hundert

C) Courses offered by the Jewish Studies Program and the Department of Philosophy

107-358A (107-345D) TOPICS IN JEWISH PHILOSOPHY I. (3 credits). The Maimonidean Revolution and its enemies.
Professor Harvey

107-359B (107-345D) TOPICS IN JEWISH PHILOSOPHY II. (3 credits). Rationalism (Focus on Moses Mendelssohn and Hermann Cohen) vs. Existentialism (Focus on Martin Buber and Franz Rosenzweig)
Professor Harvey

107-548A/549B LEGAL AND MORAL PHILOSOPHY OF THE JEWISH TRADITION. (3 credits; Prerequisite: Consent of instructor). Readings in Hebrew philosophical texts chosen in conjunction with the interest of students. 107-549B is a continuation of 107-548A.
Professor Harvey

107-552D THEMES IN THE HISTORY OF JEWISH PHILOSOPHY. (3 credits). Topic for 1976-77: Philosophical Problems raised by the Emancipation of the Jews. Consideration of Moses Mendelssohn, the Abbé Grégoire, and Napoleon's Sanhedrin. *(Not given in 1976-77).*

D) Courses of Related Interest offered by other departments

260-201A RELIGIOUS TRADITIONS OF THE ANCIENT NEAR EAST. (3 credits). The religions of Ancient Egypt, Mesopotamia and Canaan; a brief consideration of religion in general, its origin, nature and study; a consideration of geographical, historical and cultural conditions which influenced religious expression; myth and ritual.
Professor Runnalls

260-202B RELIGIOUS TRADITIONS OF THE ANCIENT NEAR EAST (3 credits). The religion of Ancient Israel in the setting of Ancient Near East; from Abraham to Ezra, continuity and discontinuity with Egypt, Mesopotamia, and Canaan.
Professor Runnalls

260-300A THE POST-BIBLICAL JEWISH TRADITION. (3 credits). Topic for Fall 1976: *The Origins of Rabbinic Judaism;* a survey of Jewish history and thought from Ezra to the Tannaim; oral tradition; Torah interpretation in the Mishnah and Midrashim.
Professor Runnalls

260-301B THE POST-BIBLICAL JEWISH TRADITION. (3 credits; Prerequisite: 260-300A or permission of instructor). Topic for Winter 1977: *The Religion and Literature of Sectarian groups.* Apocalyptic thought; Wisdom; Dead Sea Scrolls; Josephus.
Professor Runnalls

260-390D HEBREW LANGUAGE. (6 credits).
Professor Runnalls

260-490D ADVANCED BIBLICAL HEBREW. (6 credits).
Professor Culley

N.B. The two above courses are designed to provide a reading knowledge of Biblical Hebrew. They may be taken only with the instructor's permission.

160-347A THE POLITICS AND FOREIGN POLICY OF ISRAEL. (3 credits). This course will focus on the political system of Israel and her foreign policy since 1948. It will explore her political culture, parties, the electoral system and election results, political leadership, the constitutional problem, etc. The second half of the course will analyse the setting for policy choices; party programs and interest group pressures; decision-makers and their images; and the process of formulating and implementing decisions. Several important foreign policy issues will be examined to illuminate the structure and process of Israel's behaviour.
Professor Brecher

LATIN AMERICAN STUDIES

Adviser: Professor Lipp,
Department of Hispanic Studies, Bronfman Building,
Telephone: 392-4601

Minimum of 12 credits in Spanish; 42 credits from Department of Anthropology, Economics, Geography, Hispanic Studies, History, Political Science and Sociology.

LAW (490)

The Faculty of Law offers a limited number of courses for Arts students. Each course is intended for a specific group of Arts students and the Faculty of Law reserves the right to control the enrolment; i.e. permission of the Faculty of Law is necessary (see the Admissions Officer, Faculty of Law).

490-001B FOREIGN POLICY AND THE INTERNATIONAL LEGAL PROCESS: THE MIDDLE EAST AS A CASE STUDY. (3 credits). (Not open to students who have taken 491-408B.) Not given 1976-77.

490-002A CRIMINAL LAW AND SOCIETY. (3 credits). For students in behavioural sciences and Political Science. (Not open to students who have taken 491-421A.) Not given 1976-77.

490-003A THE PROCESSING OF THE OFFENDER: LEGAL PSYCHIATRIC AND SOCIAL WORK PERSPECTIVES. (3 credits). For Social Work Students; enrolment is limited to senior students. (Not open to students who have taken 491-419B.)

490-004A LAND USE PLANNING. (3 credits). Enrolment is limited to senior students enrolled in the Urban Systems Option of the Geography Major Program. (Not open to students who have taken 483-145A.)

490-005A LABOUR LAW. (3 credits). Enrolment is limited to senior students in the Industrial Relations Major Program. (Not open to students who have taken 495-369A.)

LINGUISTICS (104)

Professors — C.D. ELLIS *(Chairman);* ANDRE A. RIGAULT
Associate Professors — M. GOPNIK; D.W. LIGHTFOOT; M. PARADIS
Assistant Professors — I. BELLERT; N. DOMINGUE; G.L. PIGGOTT

Samuel Bronfman Building, Room 584. Tel.: 392-4433

GENERAL INFORMATION

The field of Linguistics deals with the study of language as a phenomenon of human behaviour and the following course list indicates the several areas covered. The Department of Linguistics does not normally undertake the teaching of any specific language, especially where provision for such instruction is made elsewhere in the University. Many linguistics courses, however, serve as a useful basis for or adjunct to language learning as well as to other fields of study.

In its undergraduate section the Department of Linguistics offers a Major, Honours and Joint Honours program to students wishing various degrees of concentration in Linguistics.

MAJOR PROGRAM

The Major program in Linguistics includes:
1) 36 credits in Linguistics. The following courses are required: 104-200A and 201B or 200B and 201A, 350A, 351B, 360A, 361B, 400A, 490A. The other courses are selected in consultation with the Department;

2) 18 credits taken in one or two of the following disciplines: Anthropology, Language (classical or modern), Philosophy, Psychology, Mathematics, Sociology. Six of the eighteen credits may be taken in Linguistics.

Inquiries may be addressed to the departmental office or the advisers for undergraduate studies.

HONOURS PROGRAM

The Honours program in Linguistics comprises
1) 42 credits in Linguistics, to include introductory Linguistics courses followed by 350A, 351B, 360A, 361B, 400A, 401B, 471B, 482D, 490A, and any other half courses to be selected in consultation with the Department;
2) Four full language courses in two languages: a major language (18 credits) and a minor language (6 credits). Students may choose either a classical language and a modern language, or two modern languages one of which must be French, German or Russian;
3) 24 credits in two subjects other than language and linguistics. Anthropology, English, Mathematics, Philosophy, Psychology, and Sociology are recommended, but other subjects may also be included with the permission of the Department.

An average B grade (minimum 65% — G.P.A. of 2.8) is required to maintain Honours standing in Linguistics and a minimum mark of 65% is normally required in each of the obligatory Linguistics courses. The normal requirement for First Class Honours is a G.P.A. of 3.6 and a high level of achievement in the research thesis (482D). Inquiries may be addressed to the departmental office or to the advisers for undergraduate studies.

JOINT HONOURS PROGRAMS

Joint Honours programs, combining Linguistics with any one of the following subjects, are available: Anthropology, Classics, English, French, German, Ancient Greek, Italian, Latin, Philosophy, Psychology, Russian, and Spanish.

Students in Joint Honours in Linguistics and Psychology are required to take Psychology 425A which may be used to fulfill either the Psychology or Linguistics requirements, but not both.

Linguistics courses required for Joint Honours in Anthropology and Linguistics: 200A and 201B or 200B and 201A, 230A, 241B, 350A, 351B, 360A, 361B, 490A, 471B and another 400 level half course.

Linguistics courses required for Joint Honours combining Linguistics and a language: introductory Linguistics courses followed by 350A, 351B, 360A, 361B, 400A, 401B, 471B, 490A and two other semester courses to be determined in consultation with the Department.

For courses required in other subjects combined with Linguistics, please consult the other Department.

Inquiries may be addressed to the departmental office or to the advisers for undergraduate studies.

COURSE DESCRIPTIONS

NOTE: One year of Introductory Linguistics (i.e., a 200-level course) will be the normal prerequisite to all higher numbered Linguistics courses.

104-200A,B/104-201A,B INTRODUCTION TO THE STUDY OF LANGUAGE. (3 credits each semester). The first section of the course will discuss some of the fundamental questions in explaining and describing language. A core of obligatory topics deals with sound, syntax, semantics and language change. In addition to these, the student will make a choice from an extended list of related issues. The second section covers additional areas including linguistics as science, non-verbal communication, language acquisition and loss, bilingualism, language as a formal system, cross-cultural linguistics, language in the arts, the empiricism/rationalism dispute as seen by linguists, and others. There will be only a few introductory lectures following which the student will work independently and in private and group tutorials. The aim of the course is to acquaint beginners in Linguistics with the wide range of contemporary views on language.

104-205D INTENSIVE INUKTITUT (ESKIMO) FOR BEGINNERS. (6 credits). An introduction to the basic structures of Inuktitut, with intensive drill and classroom practice in the use of the language. (Given only by special arrangement. Consult Department.)

104-230A ANTHROPOLOGICAL LINGUISTICS. (3 credits). This course will introduce students to language and its place in culture. Major topics will include the following: human language as a unique system, the development of language in mankind and individuals, similarity and diversity among languages, the interdependence between language and culture, the ethnography of speaking, linguistic change.
Professor Domingue

104-241B SOCIOLINGUISTICS. (3 credits; Prerequisite: Linguistics 200A, 201A or 230A). This course will focus on linguistic correlates, determinants, and consequences of social behaviour. Major topics will include linguistic variation, the description of speech events, the determinants of stylistic and linguistic choice, types of multilingual communities and language planning.
Professor Domingue

104-305D SELF-INSTRUCTIONAL LANGUAGE MODULE. (6 credits). A self-instructional course in the active control of a language required by the student and not offered by any department within the university. The course will be under the supervision of a staff-member, with guided practice with a native speaker. *(Given only by special arrangement with the Department to meet the needs of specific Honours programs.)*

104-321B LINGUISTICS APPLIED TO LANGUAGE LEARNING. (3 credits). A critical study of the application of linguistic theory and description to first and second language learning. The relationship between spoken and written language; a look at neurolinguistic theories of language acquisition.
Professor Paradis

104-330A INDIAN LANGUAGES OF NORTH AMERICA. (3 credits; Prerequisite: Linguistics 200A, 201A, 230A or permission of instructor). An introduction to Indian languages of North America: a study of their distribution and classification with special attention to selected structural types; a consideration of certain socio-linguistic problems.
Professor Ellis

104-350A GENERAL PHONETICS. (3 credits; Prerequisite: Linguistics 200A or 201A). Intensive training in the identification and production of speech sounds, followed by an acoustical analysis of speech and study of the process of auditory perception. Demonstration sessions in the Phonetics Research Laboratory form part of the course.
Professor Rigault

104-351B PHONOLOGY. (3 credits; Prerequisite: Linguistics 350A). Survey of the development of phonology: the concept of the phoneme, structural phonology, generative phonology. Introduction to the various techniques of phonological analysis. Discussion of current issues in phonological theory.
Professor Rigault

104-360A THEORY OF MORPHOLOGY AND SYNTAX. (3 credits). Proficiency in the techniques of generative grammatical research developed through application of theory to problems of limited scope.
Professor Lightfoot

104-361B SEMINAR IN MORPHOLOGY AND SYNTAX. (3 credits; Prerequisite: Linguistics 360A). Detailed research into some linguistic problem with regard to either language-particular or universal significance, or both.
Professor Lightfoot

104-400A THEORY AND METHODS OF HISTORICAL LINGUISTICS. (3 credits; Prerequisite: Linguistics 351B and 361B or permission of instructor). Theory of linguistic change; philological techniques (contrasted with field methods); exemplification from familiar languages.
Professor Piggott

104-401B SEMINAR IN HISTORICAL LINGUISTICS. (3 credits; Prerequisite: Linguistics 400A). Problems in the history of selected languages studied for their importance both to particular and to universal grammar.
Professor Piggott

104-410A STRUCTURE OF A SPECIFIC LANGUAGE. (3 credits; *Prerequisite:* One year of introductory Linguistics or permission of instructor). A detailed study of the structure of Swahili is offered as course topic for 1976.
Professor Domingue

104-450A GENERATIVE PHONOLOGY. (3 credits). The principles and methods of modern generative phonology. Attention will be given to the sound structure of natural languages and the insights which the theory of generative phonology brings to bear on the nature of phonological systems in general. Basic defferences between this theory and other theories of sound structure will be examined. A number of illustrative problems will be drawn from a wide range of languages.
Professor Piggott

104-460A PROSEMINAR I IN A SELECTED FIELD. (3 credits). Intensive study of a selected field or topic chosen to balance the requirements of the Honours program or provide for coverage of developing or less familiar areas of linguistic inquiry. The topic selected for 1976 is the history of Semantics.
Professor Bellert

104-471B FIELD METHODS OF LINGUISTICS. (3 credits). Elicitation, recording and analysis of linguistic data under simulated field conditions; consideration of typical problems confronting the field analyst. (Not open to students who have taken 104-481B).
Professor Ellis

104-482D FIELD OR RESEARCH PROJECT. (6 credits).

104-490A SEMINAR IN LINGUISTIC THEORY. (3 credits; Prerequisites: 351B and 361B or permission of Instructor). Consideration of linguistic theories from the standpoint of the philosophy of science; inquiry into the nature, construction and verification of linguistic theory and how it changes; analysis of specific theories of Linguistics in terms of the concepts which have been developed. (Not open to students who have taken 104-480A).
Professor Gopnik

104-491B ADVANCED SEMINAR IN LINGUISTIC THEORY. (3 credits; Prerequisite: Linguistics 490A). Intensive investigation of various crucial problems in different theories of language. (Not open to students who have taken 104-483B).
Professor Gopnik

MATHEMATICS (189)

Burnside Hall, Room 1005, Telephone:392-5369

General information, courses and course descriptions appear on page 20. The following programs of study are designed to provide students with every opportunity to enter a wide variety of fields.

MAJOR IN MATHEMATICS

Programs of study for students entering U1 in 1976-77.

The compulsory courses are 189-120A,B, 189-121A,B, 189-221A, B, 189-222A,B, 189-245A,B.

Advisers will approve a program of 54 credits including 48 credits in Mathematics (excluding 120A,B, 121A,B, 221A,B) of which at least 36 credits will be selected from the following: 189-217A,189-218B, 189-242A, 189-243B, 189-246A,B, 189-314A,B, 189-315A,B, 189-316B, 189-317A, 189-318A, 189-319B, 189-323A,B, 189-324A,B, 189-327B, 189-328B, 189-333A, 189-346B, 189-348A, 189-349B, 189-360B, 189-369D, 189-407B, 189-414B, 189-415A, 189-416A, 189-417A, 189-419B, 189-423A, 189-424B, 189-425A, 189-427B, 189-447B. The remaining 6 credits to be selected from Mathematics or a related discipline in consultation with the Adviser.

Guidelines for Selection of Courses in the Major Program

a) Students are advised to include the following courses in their program: 189-246A,B, 189-314A,B, 189-315A,B, 189-317A, 189-323A,B, 189-324A,B, 308-200A,B.

b) Students planning to pursue graduate studies are advised to include 189-242A, 189-243B and 189-333A in their program, and to consider substituting one or more honours courses for the corresponding courses in the Major program.

c) Students considering a career in teaching are advised to include in their program the following courses: 189-217A, 189-218B, 189-242A, 189-318A, 189-328B, 189-338B, 189-346B, 189-349B.

d) Students interested in probability and statistics are advised to also include in their program the following courses: 189-242A, 189-407B, 189-414B, 189-423A, 189-424B, 189-425A, 189-447B, as well as a course in Fortran such as 308-200A, B. With the instructor's permission the graduate courses 189-682A, 308-690A, 308-691B might also be included.

e) Students interested in applied mathematics are advised to include in their program some or all of the following courses: 189-218B, 189-242A, 189-316B, 189-319B, 189-323A,B, 189-324A,B, 189-327B, 189-407B, 189-414B, 189-415A, 189-416A, 189-417A, 189-419B, 189-427B, 308-200A,B.

f) Students interested in computer science are advised to register in the following courses: 189-318A, 189-327B, 189-328B, 189-417A, 189-427B, 308-200A,B, 308-300A,B; they should choose additional courses from 189-319B, 189-415A, 189-416A, 189-419B, 189-423A, 189-424B, 189-425A, 189-447B, 308-610A*, 308-640D*, 308-690A*, 308-691B* or 308-698A*, and 308-699B*.

g) Students interested in careers in actuarial work, in industry or government are advised to select courses from the following list: 189-319B, 189-327B, 189-328B, 189-329D, 189-369D, 189-415A, 189-416A, 189-417A, 189-419B, 189-423A, 189-424B, 189-425A, 189-447B, 308-200A,B.

The student's attention is called to the fact that a B.Com. degree with a Major in Methematics is available from the Faculty of Management. In addition the Faculty of Music offers the degree of B.Mus. (Honours in Theory with Mathematics Option.)

**These courses require special permission from the instructors.*

HONOURS PROGRAM

The minimum requirement for entry into the Honours Program is that the student has completed with high standing the following courses: 189-120A,B, 189-121A,B, 189-221A,B.

Requirements for Honours in Mathematics

For an Honours Degree in Mathematics the student must obtain 90 course credits; at least 60 of these should correspond to Honours Courses, or their equivalent, not less than 45 to Honours courses in Mathematics. In addition to the latter, the student may count towards his 60 credit Honours requirement:

i) half of the courses taken from the Major Program in Mathematics (including Computer Science courses) for which no equivalent Honours course exists;

ii) (with the approval of the Department of Mathematics) certain courses in other departments which are at an Honours level, and are closely linked to Mathematics;

iii) (with the approval of the Department of Mathematics) half the courses taken in other departments, which while not necessarily explicitly mathematical in nature, are at an Honours level and broaden the student's scientific training. Students who transfer to Honours in Mathematics from other programs will have credits for previous courses assigned, as appropriate, by the Department.

The following courses are compulsory: 189-250A,B, -251A,B, -254A,B, -255A,B, -371D, -372D.

To remain in the Honours Program, and to be awarded the Honours Degree, the student must

maintain a 2.8 Grade Point Average in the approved Mathematics courses of the Honours program.

Guidelines for Selection of Courses in the Honours Program

a) The compulsory courses may be spread over the three years study.
b) Students taking 189-250A,B, -251A,B, and 189-254A,B, -255A,B, simultaneously are advised to register also for 189-258A, -259B.
c) Students are advised to include in their program the following courses: 189-356A, 357B, 374D, -380D.
d) Students interested in Statistics should register for 189-556D and 189-587D in addition to 189-356A and 189-357B.
e) Students in Applied Mathematics should register for some or all of the courses 189-574A, -575B, -578A, -579B, -585A, and 586B in addition to 189-374D. They are also advised to select courses in areas to which they can apply their mathematics.

MIDDLE EAST STUDIES PROGRAM

Advisers — P. NOBLE *(Political Science);* MIDDLE EAST STUDIES COMMITTEE *(Co-Chairman, Political Science);* P.C. SALZMAN *(Anthropology);* MIDDLE EAST STUDIES COMMITTEE *(Co-Chairman);* C.J. ADAMS *(Islamic Institute, Religious Studies);* M. LOUTFI *(Economics);* E. ORENSTEIN *(Jewish Studies);* B. TRIGGER *(Anthropology).*

The Middle East Studies Program (under the administration of the Department of Anthropology) consists of a coordinated, interdisciplinary set of courses, including language, literature, history, religion, political science, anthropology and sociology, focusing upon the Middle East since the rise of Islam. From this set of courses are drawn various combinations which make up an Honours Program in Middle East Studies, a Majors Program in Middle East Studies, and Joint Honours Programs in Middle East Studies and Anthropology, Jewish Studies, Political Science, Religious Studies, or Sociology.

HONOURS PROGRAMS

The full honours program in Middle East Studies consists of 10 full courses (60 credits). Half of this program (30 credits) is in the language area, where a student must complete three years of one Middle Eastern language and two years of another (Arabic, Hebrew, Persian, Turkish, Urdu). The other half of the program is in the area of history, religion and the social sciences.

The joint honours programs involve 6 full courses (36 credits) in Middle East Studies and an equivalent number of courses in the companion discipline.

The basic requirements on the Middle East Studies side are 3 full courses (18 credits) in one Middle Eastern language and 3 full courses (18 credits) to be selected from the offerings in history, religion and the social sciences.

MAJOR PROGRAM

The major in Middle East Studies consists of a program of 9 full courses (54 credits). This includes 3 full courses (18 credits) in one Middle Eastern language, 5 full courses (30 credits) to be selected from the offerings in history, religion and the social sciences and 1 full course (6 credits) to be chosen from related courses dealing with the Third World.

Students interested in following one of the above programs should consult one of the co-chairmen of the Middle East Studies Committee — Professor Salzman (Anthropology) or Professor Noble (Political Science).

MODERN LANGUAGES

Adviser Professor Richter Department of German, Bronfman Building; Telephone: 392-5094

6 credits in Social Sciences; 12 credits in Linguistics; 18 credits in each of two foreign languages (not English or French).

MODERN LITERATURE

Adviser Professor Szanto, Comparative Literature Department, 3495 Peel St., Telephone: 392-5452.

6 credits in English; 6 credits in French; 12 credits in English or French Literature; 18 credits in each of two modern foreign literatures.

MUSIC (210, 211, 214, 243)

Department of Theory — D.B. Minorgan *(Chairman)*
Department of Performance — R. Lawton *(Chairman)*

The following courses are offered by the Faculty of Music as electives for students in the Faculties of Arts, Science, and Education. They are also open to students from other faculties. For a complete listing of the offerings of the Faculty of Music, please consult the Faculty of Music Announcement.

LIST I

The courses in this list are available to any students in the Faculties of Arts, Science and Education. No music prerequisites, other than those listed under a specific course, are required.

210-201A/B BASIC MATERIALS OF WESTERN MUSIC (3 credits). This course is designed to develop the skills of working with the foundational elements (i.e. with certain aspects of pitch and duration) and transformations of Western tonal music.

The ability to write, to sing and to play musical passages will demonstrate the skills of basic musicianship.

210-210A INTRODUCTION TO EARLY MUSIC (MEDIEVAL, RENAISSANCE AND BAROQUE). (3 credits). A course designed to provide the general student with an understanding of historical styles, materials, idioms and forms of Western art music from the beginnings of Catholic Liturgical music (Gregorian Chant) to the death of Bach (1750). The historical survey will be combined with a grounding in elementary theory (notation, texture, instruments, meter and rhythm, melody, harmony and form) so as to provide a basis for analysis of the stylistic characteristics of the historical periods concerned. Emphasis will be placed on the music of those composers in each historical period which best illustrates the relevant musical elements. (4 hrs/wk) (Not open to students who have taken 214-215D).

210-211B INTRODUCTION TO MUSIC AFTER 1750 (CLASSIC, ROMANTIC AND 20TH CENTURY). (3 credits). A course designed to provide the general student with an understanding of historical styles, materials, idioms and forms of Western art music, along with references to traits common to the music of other cultures and the process of acculturation, from approximately the death of Bach (1750) to the present. The historical survey will be combined with a grounding in elementary theory (notation, texture, instruments, meter and rhythm, melody, harmony and form) so as to provide a basis for analysis of the stylistic characteristics of the historical periods concerned. Emphasis will be placed on the music of those composers in each historical period which best illustrates the relevant musical elements. (4 hrs/wk) (Not open to students who have taken 214-215D).

210-310A MUSIC OF THE MIDDLE AGES AND THE RENAISSANCE. (3 credits; prerequisite: 210-210A or by permission of the instructor). A study of the main developments in sacred and secular music in Western Europe from the early Christian era to the end of the sixteenth century. Subjects such as notation, instruments, performance practice, the relation of music to parallel developments in other arts, music and poetry, music and musicians within their social milieu, and music in its ecclesiastical and humanistic framework will be discussed. *Not given in 1976-77.* (Not open to students who have taken 214-316A or 317B).

210-311B MUSIC OF THE BAROQUE. (3 credits; prerequisite: 210-210A or by permission of the instructor). The historical and sociological development of music from 1600 to 1750. Vocal and instrumental music, both sacred and secular. New forms (opera, cantata, oratorio, sonata, concerto grosso, etc.). Musical instruments. Works of composers from G. Gabrieli and Monteverdi to Handel and Bach. *Not given in 1976-77.* (Not open to students who have taken 214-318A).

210-312A MUSIC OF THE CLASSICAL PERIOD. (3 credits; prerequisite: 210-211B or by permission of the instructor). The course will survey the music written in the period encompassed by the Pre-Classic foundations of the music of Haydn, Mozart and Beethoven, beginning about 1750 and proceeding up to the death of Franz Schubert in 1828. *Not given in 1976-77.* (Not open to students who have taken 214-319B).

210-313A MUSIC OF THE ROMANTIC PERIOD. (3 credits; prerequisite: 210-211B or by permission of the instructor). The development of music during the 19th Century: instrumental, vocal and dramatic music. The Romantic style. The growth of musical historicism. Major trends in the solo, chamber music, and symphonic repertoires. Opera in Italy, France and Germany. (Not open to students who have taken 214-326A).

210-314B MUSIC OF THE 20th CENTURY. (3 credits; prerequisite: 210-211B or by permission of the instructor). A survey of "serious" music of Europe and North America from the late 19th Century to the present day. Discussion and lectures will include sociological and artistic background of various composers or "schools" of composers, compositional techniques and new notation, performance practice, as well as stylistic analysis of selected works. (Not open to students who have taken 214-327B).

213-241A ELECTRONIC MUSIC. (3 credits; *limited enrolment).* The course will be centred around the production of music by the students using tape recorders and small synthesizers. The theoretical part of the course will consist of studies in musical form and structure in the dimensions of sound frequency, intensity, timbre and time, including discussion of relevant concepts in acoustics, psychoacoustics and electronics.

213-242B ELECTRONIC MUSIC. (3 credits; prerequisite: 213-241A; *limited enrolment).* A continuation of 213-241A.

214-323A MUSIC CULTURES OF ASIA. (3 credits; prerequisite: 214-184A and 214-185B *or* 210-210A *or* 210-211B *or* by permission of the instructor). A survey of the principal music cultures of South and East Asia and the Near East (Chinese, Japanese, Indian and Islamic). The music history, theory and instruments, etc. of each culture will be discussed, along with social implications of music, aesthetic and cosmological associations of music and the function of folk music in Asian society. There will be considerable emphasis on aural analysis of recorded examples. (Not open to students who have taken 214-328D).

214-324B MUSIC CULTURES OF THE AMERICAS, AFRICA, EUROPE AND THE PACIFIC ISLANDS. (3 credits; prerequisite: 214-184A and 214-185B *or* 210-210A *or* 210-211B *or* by

permission of the instructor). A survey of folk and traditional music of the Western continents and Pacific Islands. Among topics for discussion are folk musical instruments and their tradition, various tonal systems of folk song, its melodic and rhythmic practices and structural concepts. Consideration will be given to North American aboriginal music (Indian and Eskimo) and the musics of other primitive peoples of the Pacific Islands. There will be considerable emphasis on aural analysis of recorded examples. (Not open to students who have taken 214-328D).

214-329D MUSIC CULTURES OF EAST ASIA. (6 credits; prerequisite: 101-208D The Development of East Asian Civilization *or* Music 214-323A *or* by permission of the instructor). Three main music cultures (China, Japan and Korea) will be covered. Emphasis will be on the social functions of music in its cultural context, philosophical relationships between music and government, aesthetic and cosmological associations of music, and the influence of Chinese music on the musical traditions of Korea and Japan. Among the musical topics for discussion will be musical instruments, tonal systems and notation.

LIST II

The courses in this list are intended for students who have at least high school Matriculation Music or the equivalent. Students who do not have the formal music prerequisites require the permission of the Chairman of the Theory Department to register for any of these courses. For descriptions of these courses, see the Department of Music Theory Handbook.

211-110A/B MELODY AND COUNTERPOINT. (3 credits; prerequisite: Matriculation Music or McGill Preparatory Theory Secondary V or equivalent). (Not open to students who have taken 211-223D).

211-111A/B ELEMENTARY HARMONY. (3 credits; prerequisite: 211-110A/B).

211-210A/B TONAL THEORY AND ANALYSIS I. (3 credits; prerequisite: 211-110A/B and 211-111A/B).

211-211A/B TONAL THEORY AND ANALYSIS II. (3 credits; prerequisite: 211-210A/B).

211-310A/B MIDDLE AND LATE 19th CENTURY THEORY AND ANALYSIS. (3 credits; prerequisite: 211-211A/B).

211-311A/B 20TH CENTURY THEORY AND ANALYSIS. (3 credits; prerequisite: 211-310A/B).

214-184A HISTORY SURVEY. (MEDIEVAL, RENAISSANCE AND BAROQUE). (3 credits; prerequisite or co-requisite: 211-110A and 211-111B).

214-185B HISTORY SURVEY. (CLASSICAL, ROMANTIC AND 20th CENTURY). (3 credits; prerequisite: 214-184A).

214-386B CHAMBER MUSIC LITERATURE. (3 credits; prerequisite: 214-184A and 214-185B).

214-387B OPERA LITERATURE. (3 credits; prerequisite: 214-184A and 214-185B). *Not given in 1976-77.*

214-395A KEYBOARD LITERATURE BEFORE 1750. (3 credits; prerequisite: 214-184A and 214-185B). *Not given in 1976-77.* (Not open to students who have taken 214-388B).

214-396B KEYBOARD LITERATURE AFTER 1750. (3 credits; prerequisite: 214-184A and 214-185B). *Not given in 1976-77.* (Not open to students who have taken 214-388B).

214-389B ORCHESTRAL LITERATURE. (3 credits; prerequisite: 214-184A and 214-185B).

214-390A VOCAL LITERATURE. (3 credits; prerequisite: 214-184A and 214-185B). *Not given in 1976-77.*

214-391B CANADIAN MUSIC. (3 credits; prerequisite: 214-184A and 214-185B). *Not given in 1976-77.*

214-392B BRASS LITERATURE. (3 credits; prerequisite: 214-184A and 214-185B).

215-382A PERFORMANCE PRACTICE OF BAROQUE MUSIC. (3 credits; prerequisite: 214-184A and 214-185B). *Not given in 1976-77.*

215-383B PERFORMANCE PRACTICE OF CLASSICAL MUSIC. (3 credits; prerequisite: 214-184A and 214-185B).

MUSIC ENSEMBLES

Arts and Science students may, with the permission of the instructor and the Associate Dean, participate in one of the following ensembles in a given year. Students should arrange through the Faculty of Music office (392-4501) for the necessary audition. Normally both the A and B sections of an ensemble are taken in the same academic year.

243-287A, 387B CONTEMPORARY CHAMBER MUSIC CHOIR. (2 plus 2 credits; prerequisite: audition).

243-289A, 389B WOODWIND ENSEMBLES. (2 plus 2 credits; prerequisite: audition).

243-291A, 391B BRASS ENSEMBLES. (2 plus 2 credits; prerequisite: audition).

243, 290A, 390B BAND. (3 plus 3 credits; prerequisite: audition).

243-292A, 392B CONCERT CHOIR. (2 plus 2 credits; prerequisite: audition).

243-294A, 394B CONTEMPORARY MUSIC ENSEMBLE. (2 plus 2 credits; prerequisite: audition).

243-295A, 395B JAZZ ENSEMBLE. (2 plus 2 credits; prerequisite: audition).

243-296A, 396B OPERA STUDIO. (3 plus 3 credits; prerequisite: audition).

243-297A, 397B ORCHESTRA. (3 plus 3 credits; prerequisite: audition).

243-299A, 399B STRING ENSEMBLES. (2 plus 2 credits; prerequisite: audition).

NORTH AMERICAN STUDIES PROGRAM

Committee of Advisers — PETER BUITENHUIS *(English);* HUGO McPHERSON *(English);* JEAN-PIERRE DUQUETTE *(French);* THOMAS VELK *(Economics);* MICHAEL STEIN *(Political Science);* A. RIGGS *(History);* D. VON ESCHEN *(Sociology)*

This interdisciplinary program is being offered to give undergraduates an opportunity to gain a fairly comprehensive view of the growth and achievement of Canadian or United States civilizations, or a combination of both. For a fuller description of the Canadian Studies option, see p.

The other choices are: 1) an option in U.S. Studies, concentrating on courses in the American field, or 2) an option in North American Studies in which courses from both areas are elected, or 3) an option which includes an Internship Semester, spent in part with an international or governmental agency, and in part at American University in Washington, D.C. or in London, England.

In taking the U.S. Studies Option the student will select a minimum of 54 credits dealing with the United States. These will be drawn from the Departmental offerings listed below.

In taking the North American Studies Option the student will select a minimum of 54 credits among those listed below.

Please consult Professor Velk, Department of Economics.

For more information concerning courses, please turn to listings under departmental headings.

North American Studies

110-529D THE LITERATURE OF REFORM. (3 credits). Is American devotion to the enlargement of the scope of liberty less popular and universal than her dedication to universal acquisition of equality? To examine that question, we hypothesize two separate streams to exist in late 19th century American Reform literature, one pragmatic, individualistic and Jeffersonian; the other radical, statist and Hamiltonian. That literature is, in part, a reaction to America's sudden post civil war change from a simple rural society of independent farmers to a complex urban interdependent web of economic men. We test this hypothesis by a reading of Samuel Clemens, Edward Bellamy, Walt Whitman, the Adams Brothers, Ambrose Bierce, Hamlin Garland, Bret Hart and others. The course will be introduced by readings from De Tocqueville, Hamilton and Jefferson. The social, political and economic background for the literature of reform will be found in readings from Henry George, John Bates Clark, Jacob Riis and Francis Parkman.
Professors Velk (Economics) and Riggs (History)

Anthropology

151-236B INDIGENOUS PEOPLES OF NORTH AMERICA: A GEOGRAPHICAL AND CULTURAL APPROACH. (3 credits).

151-317B PREHISTORY OF NORTH AMERICA. (3 credits; Prerequisite: 151-201B or 203A).

151-436A SEMINAR IN NORTH AMERICAN NATIVE PEOPLES. (3 credits; Prerequisite: 151-236D).

Architecture

301-372B HISTORY OF ARCHITECTURE IN CANADA. (Prerequisite: 301-102B).

Economics

154-200D or 154-250D is prerequisite to all upper level courses in Economics except those for which other provision is made in the course description.

154-205D AN INTRODUCTION TO APPLIED POLITICAL ECONOMY (6 credits).

154-211D INTRODUCTION TO CANADIAN ECONOMIC HISTORY. (6 credits).

154-302D MONEY AND BANKING. (6 credits).

154-304D CANADIAN ECONOMIC POLICY. (6 credits).

154-305D GOVERNMENT AND BUSINESS. (6 credits).

154-306D LABOUR ECONOMICS AND INSTITUTIONS. (6 credits).

154-311A UNITED STATES ECONOMIC DEVELOPMENT. (3 credits).

154-312D POLITICAL ECONOMY OF DEPENDENCE IN THE WESTERN HEMISPHERE. (6 credits).

154-321D THE QUEBEC ECONOMY. (6 credits).

154-352D MACROECONOMICS. (6 credits).

154-404D TRANSPORTATION. (6 credits).

154-408D PUBLIC FINANCE. (6 credits).

154-431A SEMINAR IN CANADIAN ECONOMIC HISTORY. (3 credits).

154-468A URBAN AND REGIONAL ECONOMICS. (3 credits).

English

110-225A AMERICAN LITERATURE I. (3 credits).

110-226B AMERICAN LITERATURE II. (3 credits).

110-228A CANADIAN LITERATURE I. (3 credits).

110-229B CANADIAN LITERATURE II. (3 credits).

110-323A 20th CENTURY AMERICAN POETRY (3 credits).

110-325D MODERN NORTH AMERICAN FICTION. (6 credits).

110-327D THE DEVELOPMENT OF PROSE FICTION IN CANADIAN LITERATURE. (6 credits)

110-329D. 20th CENTURY CANADIAN LITERATURE. (6 credits).

110-525B AMERICAN LITERATURE. (3 credits).

110-527A CANADIAN LITERATURE. (3 credits).

110-528B CANADIAN LITERATURE. (3 credits).

French

125-204A CIVILISATION QUEBECOISE. (3 credits).

125-205B CIVILISATION QUEBECOISE. (3 credits).

125-328D HISTOIRE DE LA CIVILISATION QUEBECOISE. (6 crédits).

125-315A,B LE CINEMA QUEBECOIS. (3 crédits).

125-370A LA LITTERATURE QUEBECOISE JUSQU'EN 1940. (3 crédits).

125-371B LA LITTERATURE QUEBECOISE DEPUIS 1940. (3 crédits).

125-372D ROMAN QUEBECOIS JUSQU'EN 1945. (3 crédits).

125-373B ROMAN QUEBECOIS (1945-1960). (3 crédits).

125-377A LA CRITIQUE LITTERAIRE QUEBECOISE. (3 crédits).

125-378B LE CONTE QUEBECOIS. (3 crédits).

125-382D ROMAN QUEBECOIS DEPUIS 1960. (6 crédits).

125-470A POESIE QUEBECOISE DE CREMAZIE A SAINT-DENYS-GARNEAU (1850-1940). (3 crédits).

125-471B POESIE QUEBECOISE D'ALAIN GRANDBOIS A NOS JOURS (DEPUIS 1940). (3 crédits).

125-485A ESSAI QUEBECOIS AVANT 1960. (3 crédits).

125-486B ESSAI QUEBECOIS DEPUIS 1960. (3 crédits).

French Canada Studies Program

Consult page 36 of this Announcement.

Geography

183-236A INDIGENOUS PEOPLES OF NORTH AMERICA. (3 credits).

183-309A CANADA: GEOGRAPHIC FOUNDATIONS. (3 credits).

183-311B GEOGRAPHICAL ATTRIBUTES TO THE CANADIAN ECONOMY. (3 credits).

183-325A PHYSICAL GEOGRAPHY OF QUEBEC. (3 credits).

183-326B HUMAN GEOGRAPHY OF QUEBEC. (3 credits).

183-333A MONTREAL URBAN FIELD STUDIES. (3 credits).

History

101-202A CANADA TO 1867. (3 credits).

101-203B CANADA SINCE 1867. (3 credits).

101-211A THE U.S. TO 1865. (3 credits).

101-221B THE U.S. SINCE 1865. (3 credits).

101-322B CANADA AND THE AMERICAN PRESENCE SINCE 1939. (3 credits; Prerequisite: History 202D or consent of instructor).

101-331D EMERGING MODERN AMERICA, 1877-1945. (6 credits; Prerequisite: History 211A and 221B or consent of the instructor).

101-332D CANADA AND THE BIRTH OF CONFEDERATION. (6 credits; Prerequisite: History 202D or equivalent or consent of instructor). *Not given in 1976-77.*

101-341D THEMES IN THE SOCIAL AND ECONOMIC HISTORY OF THE UNITED STATES, 1830-1940. (6 credits; Prerequisite: History 2211A or 221B).

101-352D EMERGENCE OF ENGLISH CANADA: 1791-1867. (6 credits; Prerequisite: 202D or consent of instructor).

101-353D WAR AND SOCIETY IN CANADIAN HISTORY. (6 credits; Prerequisite; History 202D; This course is not open to candidates who have previously taken History 372D).

101-362D THE WEST AND THE NORTH IN CANADIAN HISTORY. (6 credits; Prerequisite; 202D).

101-363D CONTEMPORARY CANADA; 1890-1970. (6 credits; Prerequisite: History 202D or equivalent, or consent of instructor). This course is not open to candidates who have previously taken History 302A and 312B.

101-403D THE COMING OF THE QUIET REVOLUTION. (6 credits; Prerequisite: Any course in Canadian or Quebec history). A reading and speaking knowledge of French is essential.

101-413D RACE AND RELIGION IN FRENCH-CANADIAN LIFE AND SOCIETY. (6 credits; Prerequisite: History 202D).

101-452D SOURCES OF CONFLICT IN CANADIAN HISTORY. (6 credits; Prerequisite: 202D). *Not given in 1976-77.*

Political Science

160-211D INTRODUCTION TO COMPARATIVE GOVERNMENT. (6 credits).

160-221D GOVERNMENT OF CANADA. (6 credits).

160-318A LOCAL GOVERNMENT IN COMPARATIVE PERSPECTIVE. (3 credits).

160-320A CANADIAN POLITICAL PROCESS I. (3 credits: Prerequisite: 160-211D).

160-321B CANADIAN POLITICAL PROCESS II. (3 credits; Prerequisite: 160-211D).

160-325D GOVERNMENT AND POLITICS OF THE UNITED STATES. (6 credits).

160-337B CANADIAN PUBLIC ADMINISTRATION. (3 credits; Prerequisite: 160-321D or consent of instructor).

160-415B POLITICAL PARTIES. (3 credits; Prerequisites: 160-211D and one other course in Comparative Government).

160-421B PROBLEMS IN CANADIAN POLITICS AND GOVERNMENT. (3 credits; Prerequisites: 160-221D and 160-320A).

Sociology

166-210A INTRODUCTION TO SOCIOLOGY. (3 credits).

166-214B INTRODUCTION TO SOCIOLOGY: CANADIAN SOCIAL STRUCTURE. (3 credits).

166-217A MASS COMMUNICATIONS. (3 credits).

166-221B CLASS AND POLITICS IN THE UNITED STATES. (3 credits).

166-223B SOCIAL STRATIFICATION. (3 credits).

166-230B CLASS, ETHNICITY AND POLITICS IN CANADA AND IN QUEBEC. (3 credits).

166-317B RESEARCH IN CANADIAN MASS COMMUNICATIONS. (3 credits).

166-326A POLITICAL SOCIOLOGY. (3 credits).

166-411A STATE AND ECONOMY IN INDUSTRIAL SOCIETIES. (3 credits).

PHILOSOPHY (107)

Professors — HARRY M. BRACKEN; MARIO BUNGE; ALASTAIR McKINNON *(Chairman);* J.A. TRENTMAN

Associate Professors — R STORRS McCALL; DAVID FATE NORTON *(on leave);* JONATHAN ROBINSON; WILLIAM SHEA; JEREMY WALKER

Assistant Professors — GEORGE DiGIOVANNI; ANIL K. GUPTA; WARREN HARVEY; J. McGILVRAY

Visiting Professor — K. BORMANN

Samuel Bronfman Building, Telephone 392-5170

The Department of Philosophy has renumbered many of its courses according to the following principles. (To avoid confusion at registration old numbers are shown in brackets. **Note:** Students who took courses under their old numbers may not retake them under their new numbers).

First digit

2xx	All Introductory Level Courses
3xx	All Intermediate Level Courses
5xx	All Upper Level Courses (open to graduates)
6xx	All Graduate Courses

Second digit

x0x	Philosophy of Language, Metaphysics, Epistemology.
x1x	Logic, Philosophy of Logic
x2x	Philosophy of Science, Philosophy of Social Science
x3x	Ethics, Philosophy of Religion, Aesthetics, etc.
x4x	Philosophy of History, Philosophy of Politics, Philosophy of Law
x5x	History (Greek and Medieval)
x6x	History (17th, 18th and 19th centuries)
x7x	Contemporary Philosophy
x8x	Seminars (Logic, Metaphysics, etc. Philosophy of Science)
x9x	Seminars (Value theory, History, Tutorials)

MAJOR IN PHILOSOPHY

54 credits in Philosophy, including:
6 credits at Introductory Level (2xx)
3 credits in Logic (x1x)
6 credits in Greek or Modern philosophy (as below)
27 credits in other philosophy courses
12 optional credits

Majors Adviser: Professor Warren Harvey — tel. 392-4517

HONOURS IN PHILOSOPHY

60 credits in Philosophy, including:

6 credits at Introductory Level (2xx)
6 credits in Logic (x1x)
6 credits in Greek or Modern philosophy (354A, 355B, 360A, 361B)

6 further credits in history survey courses (35x, 36x)
6 credits in value theory (x3x, x4x)
6 credits in Tutorial (final year) (498A,B 499D)
6 further credits at Upper Level (5xx)
18 credits in optional courses

Up to 12 of the 'optional' credits may, with the Department's approval, be taken in another department.

In the final year Tutorial, students will prepare for a 3-hour examination, to be written at the end of the year. Graduating students may also take another tutorial and write a short Honours thesis.

JOINT HONOURS IN PHILOSOPHY

36 credits in Philosophy, including:

6 credits at Introductory Level (2xx)
3 credits in Logic (x1x)
6 credits in Greek or Modern philosophy (as above)
21 credits in optional courses

Students must consult the Department for specific arrangements.

Admission Requirements: 3.0 CGPA. Students must maintain a 3.0 GPA overall and a 3.0 GPA average in Philosophy.

Honours Adviser: Professor Jeremy Walker — tel. 392-5169

COURSE DESCRIPTIONS

107-200A INTRODUCTION TO PHILOSOPHY I. (3 credits). The course will deal with some of the central problems of philosophy: the mind-body problem, freedom, scepticism and certainty, fate, time and the existence of God.
Professor McCall

107-201B INTRODUCTION TO PHILOSOPHY II. (3 credits). Major philosophical problems such as the nature and sources of knowledge, freewill and determinism. God, punishment, the nature of mathematics, etc. (This course is a continuation of Philosophy 200A but can be taken separately).
Professor Gupta

107-210A, B INTRODUCTION TO LOGIC. (3 credits). Propositional and predicate logic: formalization of arguments, truth tables, natural deduction and related topics.
Professors Gupta and McCall

107-211B PHILOSOPHY OF LOGIC. (3 credits). Not given in 1976-77

107-220A INTRODUCTION TO HISTORY AND PHILOSOPHY OF SCIENCE, Part I. (3 credits). A survey of the major scientific revolutions from Antiquity to the Twentieth Century.
Professor Shea

107-221B INTRODUCTION TO HISTORY AND PHILOSOPHY OF SCIENCE, Part II. (3 credits). Canadian Men and Women of Science. Science and society in Canada from the Sixteenth Century to the present with special reference to the contribution of scientists at McGill.
Professor Shea

107-230D (205D) INTRODUCTION TO MORAL PHILOSOPHY. (6 credits). Topic for 1976-77: An attack on moral scepticism. Several contemporary moral issues, as well as theoretical issues, are discussed.
Professor McKinnon

107-240A SOCIAL AND POLITICAL PHILOSOPHY. (3 credits). Traditions of philosophical inquiry about the principles of social and political practice.
Professor Walker

107-241B SOCIAL AND POLITICAL PHILOSOPHY. (3 credits). Philosophical analysis of some features of 20th century politics. Topic for 1976-77: Order and violence.
Professor Walker

107-270B (212B) INTRODUCTION TO ANALYTIC PHILOSOPHY. (3 credits). *Not given in 1976-77.*

107-300A (107-313D) PHILOSOPHY OF LANGUAGE. (3 credits; prerequisite: one course in philosophy). A discussion of several philosophical problems connected with language: meaning, translation, truth, and related topics.
Professor McGilvray

107-303B PHILOSOPHY OF MIND. (3 credits). Minds and Machines: a discussion of "mechanical" modelling of human behaviour (particularly speech) and the identity crisis.
Professor McGilvray

107-304A CHOMSKY. (3 credits; one course in philosophy). Philosophical aspects of Chomsky's contributions to psychology, linguistic theory, theories of human nature, and to politics.
Professor Bracken

107-321D PHILOSOPHY OF SCIENCE. (6 credits). *Not given in 1976-77.*

107-322D METHOD AND METAPHYSICS IN THE SCIENTIFIC REVOLUTION. *Not given in 1976-77.*

107-324A PHILOSOPHY OF SOCIAL SCIENCE I. (3 credits; prerequisite: one course in philosophy). The nature of social science. Some classical controversies: naturalism vs. humanism, materialism vs. idealism, and individualism vs. holism. The problem of value neutrality. Mathematical modelling in social science: some examples. Observation, measurement, and experiment in social science. Social indicators.
Professor Bunge

107-325B PHILOSOPHY OF SOCIAL SCIENCE II. (3 credits; prerequisite: one course in philosophy). The systems approach to society. From sociobiology to human bonds. Economy, culture and polity as subsystems of society. Social cohesiveness. Social history. The kinematics of revolutions. Some topical problems in social anthropology, sociology, politology and historiography.
Professor Bunge

107-330B (107-407B) PHILOSOPHY AND LITERATURE. (3 credits; prerequisite: one course in philosophy). Topic for 1976-77: Philosophical concepts in the works of such female writers as Virginia Woolf and Iris Murdoch.
Professor Walker

107-332D PHILOSOPHY OF RELIGION. (6 credits; prerequisite: one full course in philosophy or consent of the instructor). A discussion of the main problems of the philosophy of religion as considered in the works of various philosophers.
Professor McKinnon

107-336A (107-305A) AESTHETICS I. (3 credits). *Not given in 1976-77.*

107-337B (107-306B) AESTHETICS II. (3 credits; prerequisite: one course in philosophy). Topic for 1976-77: Language and Literature.
Professor Walker

107-344B (107-572D) PHILOSOPHY OF POLITICS. (3 credits; prerequisite: one course in philosophy). Topic for 1976-77: Hobbes, *Leviathan* and Spinoza, *Theologico-Political Tractatus*
Professor Harvey

107-346D (107-335D) PHILOSOPHY OF HISTORY. (6 credits; prerequisite: one course in philosophy). The first half of this course deals with some of the most influential theories in the philosophy of history including those of Vico, Hegel, Marx and Comte. The second half is concerned with modern attempts to analyse the nature of historical thinking including those of Hempel, Gallie, Dray and Butterfield.
Professor Robinson

107-348A PHILOSOPHY OF LAW. (3 credits). A discussion of the nature of justice and law, and of the relationship between them. (This course is intended for students with a non-professional interest in law, as well as for those considering law as a profession).
Professor McCall

107-354A (107-339A) PRESOCRATICS AND PLATO. (3 credits). A survey course concentrating on selected texts.
Professor Trentman

107-355B (107-340B) ARISTOTLE AND LATER GREEK PHILOSOPHY. (3 credits). A survey course concentrating on selected texts.
Professor Trentman

107-356A (107-341A) AUGUSTINE TO AQUINAS. (3 credits). Examination of selected works of the great Christian, Moslem and Jewish thinkers.
Professor Harvey

107-357B (107-342B) POST-AQUINAS TO RENAISSANCE. (3 credits). A survey of philosophy from approximately 1300 to 1630. The topics discussed will include nominalism, humanism, new attitudes towards Plato and Aristotle, the influence of the revival of sceptism and of the Reformation, and the legal and political philosophy of the period. The course will also consider whether there was a Renaissance and, if there was, what it might have been.
Professor Trentman

107-358A (107-345D) TOPICS IN JEWISH PHILOSOPHY I. (3 credits). The Maimonidean revolution and its enemies.
Professor Harvey

107-359B (107-345D) TOPICS IN JEWISH PHILOSOPHY II. (3 credits). Rationalism (focus on Moses Mendelssohn and Hermann Cohen) vs. Existentialism (focus on Martin Buber and Franz Rosenzweig).
Professor Harvey

107-360A (107-349A) SEVENTEENTH CENTURY PHILOSOPHY. (3 credits). A survey course concentrating on selected texts from Montaigne, Descartes, Malebranche, Leibniz, Spinoza, Locke.
Professor Bracken

107-361B (107-350B) EIGHTEENTH CENTURY PHILOSOPHY. (3 credits). A survey course concentrating on selected texts from Bayle, Berkeley, Hume, Reid.
Professor Bracken

107-366A (107-351A) KANT TO HEGEL. (3 credits). The course will alternate between a study of themes characteristic of German Idealism, and a detailed analysis of texts from Kant, Fichte, Schelling and Hegel. German Idealism will be interpreted as an intricate effort at making reason "historical".
Professor DiGiovanni

107-367B (107-352B) POST-HEGELIAN PHILOSOPHY. (3 credits). A study of philosophers selected from such traditions as the Kantian, Hegelian, Marxist, Existentialist, Utilitarian, and the forebearers of Phenomenology.
Professor DiGiovanni

107-370A (317A) PROBLEMS IN ANALYTIC PHILOSOPHY I. (3 credits). *Not given in 1976-77.*

107-371B (318B) PROBLEMS IN ANALYTIC PHILOSOPHY II. (3 credits) *Not given in 1976-77.*

107-374A PHENOMENOLOGY. (3 credits; prerequisite: one previous course in philosophy). The course will explore the "Phenomenological Movement" both historically and critically. An attempt will be made to identify the nature of Phenomenology,

and to contrast it with other forms of Philosophy. The class will also consider the question of how Phenomenology became at some point "existential". *Not given in 1976-77.*

107-375B EXISTENTIALISM. (3 credits; prerequisite: one course in philosophy). Special attention will be given to contemporary proponents of Existentialism, and also to the question of how contemporary Existentialism is related to Phenomenology. However, an effort will also be made to recognize a tradition of "existential thought" running through the history of Western Philosophy.
Professor DiGiovanni

107-382A (107-381D) PROBLEMS IN PHILOSOPHY I. (6 credits). *Not given in 1976-77.*

107-383B (107-381D) PROBLEMS IN PHILOSOPHY II. (6 credits) *Not given in 1976-77.*

107-398A,B (107-398A/399B) TUTORIALS. (3 credits). Open to second year Full Honours students in Philosophy, and to other students, with consent of the Department.
Staff

107-399D (107-399B) TUTORIALS. (6 credits). Open to second year Full Honours students in Philosophy, and to other students, with consent of the Department.
Staff

107-498A, B (107-598A/599B) TUTORIALS. (3 credits). Open to Third Year Full Honours students in philosophy, and to other students with consent of the Department.
Staff

107-499D (107-599B) TUTORIALS. (6 credits). Open to Third Year Full Honours students in Philosophy, and to other students with consent of the Department.
Staff

107-500A (107-581A) METAPHYSICS, DIALECTICS, LOGIC AND EPISTEMOLOGY. (3 credits). *Not given in 1976-77.*

107-501B (107-582B) METAPHYSICS, DIALECTICS, LOGIC AND EPISTEMOLOGY. (3 credits; prerequisite: Philosophy 210A or equivalent). Modal semantics: semantics for modal logic, deontic logic (the logic of obligation and permission) tense logic, and the logic of events.
Professor McCall

107-502A (107-585A) METAPHYSICS I. (3 credits). *Not given in 1976-77.*

107-503B (107-586B) METAPHYSICS II. (3 credits; permission of the instructor). Subject for 1976-77: Time. A discussion of several philosophical issues concerning time, including becoming, tensed versus tenseless descriptions, and the relative versus absolute debate.
Professor McGilvray

107-504A (107-517D) PROBLEMS IN SEMANTICS I. (3 credits); prerequisite: consent of the instructor). The structure of languages. Signs and constructs. Predicates and propositions. The problem of the existence of constructs. The designation relation. The reference classes of predicates, propositions, and theories. The representation relation. Do factual theories represent? The concept of intension. A calculus of intensions. Philosophical controversies over the problems of designations, reference, representation and intension. Conventialism, Platonism, psychologism, empiricism, and realism.
Professor Bunge

107-505B (107-517D) PROBLEMS IN SEMANTICS II. (3 credits; continuation of Philosophy 504A). The sense of a construct. Purport and import. Total sense and factual sense. Interpretation of a sign system. Formal interpretation and factual interpretation. Truth: formal, factual and philosophical. Truth, probability, and testability. Extension. Vagueness. Definite description. Philosophical controversies over the problem of sense, interpretation, and truth. Extensionalism, nominalism, pragmatism, Platonism, realism, etc. The relations of logic and semantics to ontology and science.
Professor Bunge

107-510B INTERMEDIATE LOGIC. (3 credits; prerequistie: Logic 210 or equivalent). Metatheory of propositional and predicate logic; deduction theorem, completeness theorem, etc... Elementary number theory; Godel's incompleteness theorem (if time permits).
Professor Gupta

107-511D MEDIAEVAL LOGIC AND GRAMMAR. (6 credits). *Not given in 1976-77.*

107-520D METHODOLOGY AND PHILOSOPHY OF SCIENCE. (6 credits). *Not given in 1976-77.*

107-522A, 107-523B (107-523A & 524B) FORMAL METHODS IN PHILOSOPHY AND SOCIAL SCIENCE I & II. (3 credits each). *Not given in 1976-77.*

107-528A, 107-529B (107-527A & 528B) PHILOSOPHY OF PHYSICS I & II. (3 credits each). *Not given in 1976-77.*

107-526D (107-445D) SCIENCE AND PHILOSOPHY IN THE 17TH CENTURY. (6 credits). *Not given in 1976-77.*

107-530A (107-404D) MORAL PHILOSOPHY. (3 credits; prerequisite: one course in philosophy). Topic for 1976-77: Individual and Society.
Professor Walker

107-532A, 107-533B (107-531A & 532B) SEMINAR IN PHILOSOPHY OF RELIGION I & II. (3 credits each). *Not given in 1976-77.*

107-538D (107-401D) SEMINAR IN THE HISTORY OF ETHICS. (6 credits). *Not given in 1976-77.*

107-548A LEGAL AND MORAL PHILOSOPHY OF THE JEWISH TRADITION I. (3 credits). Readings in Hebrew of philosophic texts chosen in accordance with interests of students.
Professor Harvey

107-549B LEGAL AND MORAL PHILOSOPHY OF THE JEWISH TRADITION II. (3 credits). Readings in Hebrew of philosophic texts chosen in accordance with interests of students.
Professor Harvey

107-550A (107-541A) SEMINAR IN ANCIENT PHILOSOPHY. (3 credits; prerequisite: consent of the lecturer). Topic for 1976-77: *Aristotle: De Anima.*
Professor Trentman

107-551B (107-542B) SEMINAR IN ANCIENT PHILOSOPHY. (3 credits). *Not given in 1976-77.*

107-552D THEMES IN THE HISTORY OF JEWISH PHILOSOPHY. (3 credits). *Not given in 1976-77.*

107-560A (107-555A) SEMINAR IN 17TH AND 18TH CENTURY PHILOSOPHY. (3 credits). *Not given in 1976-77.*

107-561B (107-556B) SEMINAR IN 17TH AND 18TH CENTURY PHILOSOPHY. (3 credits; prerequisite: one course in philosophy). Topic for 1976-77: Seventeenth century theories of mind.
Professors Bracken and Trentman

107-562D (107-544D) SEMINAR IN THE HISTORY OF PHILOSOPHY. *Not given in 1976-77.*

107-564A (107-565D) SEMINAR IN KANT I. (3 credits; prerequisite: one course in philosophy).
Professor DiGiovanni

107-565B (107-565D) SEMINAR IN KANT II. (3 credits). *Not given in 1976-77.*

107-566D (107-558D) SEMINAR IN HEGEL. (6 credits; prerequisite: one course in philosophy). Topic for 1976-77: The Phenomenology of Mind.
Professor Robinson

107-568D (107-563D) SEMINAR IN KIERKEGAARD. (6 credits). *Not given in 1976-77.*

107-570A, 107-571B (107-513A & 514B) RECENT AND CONTEMPORARY PHILOSOPHY. *Not given in 1976-77.*

107-580A, 107-581B (107-587A and 588B) SEMINAR IN PROBLEMS OF PHILOSOPHY. *Not given in 1976-77.*

107-588A (107-583A) SEMINAR IN SYSTEMATIC PHILOSOPHY. (3 credits; prerequisite: Philosophy 210A or equivalent). Topic for 1976-77: Themes in Philosophy of Logic.
Professor Gupta

107-589B (107-584B) SEMINAR IN SYSTEMATIC PHILOSOPHY. *Not given in 1976-77.*

107-590A (107-593A) SEMINAR IN PHILOSOPHY. (3 credits; prerequisite: consent of the lecturer). Topic for 1976-77: Spinoza: *Principles of Cartesian Philosophy.* (Spinoza's interpretation of Descartes and the foundation of his own philosophical system).
Professor Shea

107-591B (107-594B) SEMINAR IN PHILOSOPHY. (3 credits; prerequisite: consent of the instructor). Topic for 1976-77: Spinoza: *Ethics.*
Professor Shea

POLITICAL SCIENCE (160)

Professors — MICHAEL BRECHER *(on leave second term 1976-77);* J.R. MALLORY; BALDEV RAJ NAYAR; CHARLES TAYLOR (on leave 1976-77)
Associate Professors — THOMAS BRUNEAU; PETER GOUREVITCH *(on leave 1976-77);* FRANK A. KUNZ *(Chairman);* PAUL C. NOBLE; JANICE STEIN; MICHAEL STEIN; BLEMA S. STEINBERG *(on leave 1976-77);* HAROLD M. WALLER
Assistant Professors — JEROME BLACK; BARBARA HASKEL; DANIEL LATOUCHE; SAMUEL J. NOUMOFF; PHILIP SABETTI; HAROLD SARF; JOHN SHINGLER
Visiting Professors — ANDRE BERNARD; EDOUARD CLOUTIER

Stephen Leacock Building, Room 434, Telephone: 392-5239

Students wishing to Honour or Major in Political Science MUST consult with a Departmental Adviser prior to registration EACH year in order to devise a suitable program. Students who are registering with the Department for the first time must bring transcripts of their previous CEGEP or university level work.

MAJOR PROGRAM

The Major program in Political Science consists of 9 full courses (54 credits) of which at least 7 full courses (42 credits) must be in Political Science. A student is encouraged to take up to 2 (12 credits) of these 9 courses outside the Department provided they are closely related to his Political Science program.

In the U1 year, a major student must take a total of twelve credits in Political Science, covering at least two of the four main fields of concentration offered by the Department (Comparative Government and Politics, Canadian and Quebec Government and Politics, International Politics, and Political Theory). The course requirements in the various fields are outlined below.

Overall, while some concentration in one area of the discipline is considered beneficial, excessive specialization is discouraged. Students are therefore required to take at least one third of their Politi-

cal Science program (i.e. at least five half courses) outside their area of concentration.

OTHER MAJOR PROGRAMS

A *major* program is available with the Departments of *Economics and History*. The requirement for this degree is 5 full courses in Political Science and 5 full courses in the other Departments. The same principles concerning the distribution of courses that were outlined above for the single major apply here too, both at the U-1 level and overall.

In addition, students can follow *double majors* programs involving Political Science and some other related discipline. These differ from the major with Economics in that they require the student to complete all the requirements for the single major in *both* Departments (i.e. at least 6 or 7 courses on each side.)

Further information may be obtained from the Major Adviser, Professor Michael Stein, 392-5249.

HONOURS PROGRAM

The Honours program in Political Science consists of 10 full courses (60 credits) of which at least 8 full courses (48 credits) must be in Political Science. A student may take up to two of these 10 courses outside the Department provided they are closely related to his or her Political Science program.

In the U1 year, a student must take a total of 15 credits in Political Science, covering at least three of the four main fields offered by the Department (Comparative Government and Politics, Canadian and Quebec Government and Politics, International Politics, Political Theory). The course requirements in the various fields are outlined below.

Overall, while some concentration in one area of the discipline is considered beneficial, excessive specialization is discouraged. In the U-3 year all Honours students are required to take one 600 level course or 400 level honours seminar as part of their program. (For the list of these 600 level courses, please consult the departmental course description booklet which is available in the Department office).

JOINT HONOURS

Joint Honours programs are currently available in the following areas:

Political Science and Economics
History
Philosophy
Sociology
Anthropology
Middle East Studies

Students who are interested in pursuing a joint honours program in some other area (e.g. Political Science and one of the modern languages or Political Science and Geography) should get in touch with the Honours Adviser to see if a suitable program can be devised. Such programs will then be submitted for approval to the Faculty of Arts.

The requirements for joint honours degrees are 6 full courses (36 credits) in Political Science and 6 full courses (36 credits) in the other honours subject. The same principles concerning the distribution of courses that were outlined above for the single honours program apply here too, both at the U-1 level and overall. Joint honours students, like single honours students, are also required to take one 600 level course or 400 level honours seminar in their U-3 year.

STANDARDS

To be eligible for entry into an honours program a student should have placed in the top third of his/her previous CEGEP, university or grade XIII classes. To remain in honours, a student must maintain a cumulative average in the upper half of the B category (i.e. 72% plus) in his/her Political Science courses and an overall GPA of at least 2.8. In addition, honours students must also maintain a satisfactory pattern of performance in their Political Science courses (i.e. very few, if any, grades below the required average).

Students awarded honours standing in U-1 may lose it at the end of the year or in subsequent years if their performance is not up to these standards.

Conversely, students who were not awarded honours standing in U-1 may attain it subsequently if their performance merits it. To be awarded honours at graduation, however, a student must be registered as an honours student at the beginning of his U-3 year. At graduation a student's honours standing will be determined by his overall record in the honours program.

Further information may be obtained from the Honours Adviser, Professor Paul Noble, 392-5237.

BASIC POLITICAL SCIENCE FIELDS

Students entering an honours or majors program may wish to concentrate to some extent in one or more areas of Political Science. If so, they should take note of the basic course requirements in these fields.

1) COMPARATIVE GOVERNMENT AND POLITICS

Students wishing to concentrate in this field are normally required to take 160-211D (Comparative Government and Politics) and are strongly urged to take 160-227B (Political Change in the Third World).

2) CANADIAN AND QUEBEC GOVERNMENT AND POLITICS

Students wishing to concentrate in this field are required to take 160-221D (Government of Canada) and are strongly urged to take 160-226A (La Vie Politique Québécoise).

3) INTERNATIONAL POLITICS

Students wishing to concentrate in this field are required to take 160-244A (International Politics) or

160-245B (The International System). While only required to take one of these courses, students should note that it would be helpful if they took both, since they concentrate on different problem areas in the study of international politics.

4) POLITICAL THEORY

Students wishing to concentrate in this field are normally required to take 160-231D (Political Theory).

COURSE DESCRIPTIONS

This announcement is prepared early in the year and so is likely to need modification by the time the academic year begins. A mimeographed supplement is available in the department office and should be consulted.

Specific course prerequisites may be waived by instructors in individual cases.

**Denotes not offered 1976-77.*

160-211D COMPARATIVE GOVERNMENT AND POLITICS. (6 credits). This course will first examine in detail the major features and processes of the political systems of Britain, France and Germany. The course will then move to focus cross nationally on the themes of conflict and consensus in these polities. Reference will also be made to Belgium, Canada and the U.S.A.
Professor Black

* **160-212A TECHNIQUES OF SOCIAL RESEARCH.** (3 credits). An introduction to the practical and theoretical problems of political research. Among the topics considered are the formulation of research problems, the selection of samples, interviewing, and questionnaire construction, and the analysis and interpretation of data. Students will have practical experience in these techniques.

160-221D GOVERNMENT OF CANADA. (6 credits). An examination of the operation of parliamentary institutions in a federal state, and of the operation of federalism in Canada.
Professor Mallory

157-226A LA VIE POLITIQUE QUEBECOISE. (3 crédits). Une introduction à la vie politique québécoise à travers l'étude des institutions, des idéologies et des comportements politiques. Une attention particulière sera accordée aux changements survenus dans le système politique québécois. Bilingue.
Professeur Bernard

160-227B POLITICAL CHANGE IN THE THIRD WORLD: INDEPENDENCE AND NATION BUILDING. (3 credits). An introductory course on the politics of the Third World, dealing primarily with the role of forces in the achievement of independence and the building of nations. Several theories on independence movements and revolutions will be discussed and then related to experiences in Asia, Africa and Latin America.
Professor Bruneau

160-231D POLITICAL THEORY. (6 credits. This course is normally a prerequisite for all upper level courses in political philosophy). The first half will be taken up with a discussion of contemporary political issues: e.g., the understanding of politics, the politics of violence, community and authority. The second term will be devoted to the study of certain works of philosophy and literature which reflect political reality.
Professors Noumoff, Sarf, Shingler

160-244A INTERNATIONAL POLITICS. (3 credits). An analysis of the factors determining foreign policy behaviour, both domestic and international, and an examination of several foreign policy decisions and international crises. The process of foreign policy implementation will also be studied. Students will be encouraged to do experimental projects in the field.
Professor J. Stein

160-245B THE INTERNATIONAL SYSTEM. (3 credits). The course will focus on the setting of world politics. Particular emphasis will be placed on the nature of contemporary international politics. The stratification of the international system to which differences in technology and military power, economic power, legitimacy, and skill contribute, will be treated as well as forces such as increasingly rapid communications, nationalism, and ideology which cut across the system.
Professor Noble

160-247B FOREIGN POLICY IN THE THIRD WORLD. (3 credits). This course will examine domestic and external sources of conflict within the Third World. It is experimental in form: students will work at their own pace through the use of individually designed modules. Students are requested to consult the special course description which is available in Leacock 434.
Professor J. Stein

160-312A PUBLIC OPINION. (3 credits). Three major aspects of public opinion will be covered: theory of public opinion and its function in the political system, measurement, and evaluation of some of the major Canadian and American studies. Students will have an opportunity to engage in secondary analysis of survey data. Computer applications in political research will be stressed.
Professor Black

* **160-313D POLITICAL AND SOCIAL MOVEMENTS AND EXTRA-PARLIAMENTARY POLITICAL ACTION.** (6 credits). After a general theoretical introduction of Fascism, Anarchism, Marxism and Democracy, case studies of various movements will be examined. These include labour movements, student movements, youth politics and the new left, minority group movements, anti-war movements and protests in the U.S.A. women's liberation and feminist movements.

* **157-316A QUEBEC AND NORTH AMERICA.** (3 credits). In what ways and to what extent can Quebec be considered a North American society; the role of messianism and utopism; major manifestations of the distinctiveness of Quebec in North America: politics, cultural development, economic tradition; Quebec-U.S.A. relations; the problem of economic domination. (A reading knowledge and a minimal ability to understand spoken French are required; writing and speaking ability are not required).
Professor Latouche

160-318A LOCAL GOVERNMENT IN COMPARATIVE PERSPECTIVE. (3 credits). An examination of the organization and conduct of local government in Canada, the United States and selected West European countries. Special attention will be paid to the theories of local government, the criteria for comparative analysis, the provision of public goods and bads, urban political patterns and the constitution of new institutional arrangements to deal with "the urban crisis"
Professor Sabetti

160-319D POLITICS OF LATIN AMERICA. (6 credits: prerequisite: 160-227B or consent of instructor). This course will deal with the dynamics of political change in Latin America today.
Professor Bruneau

160-320A THE CANADIAN POLITICAL PROCESS (I). (3 credits; Prerequisite: At least one other course in Canadian or Comparative Government and Politics). A critical analysis of different aspects of the Canadian Political Process. The first semester will be devoted to the socioeconomic and political environment, political ideology and political culture, the electoral system, the party system, the ideology, structure and behaviour of parties and pressure groups and elites.
Professor M. Stein

160-321B THE CANADIAN POLITICAL PROCESS (II). (3 credits; Prerequisite: at least one other course in Canadian Politics). A critical analysis of the Canadian Political Process through an examination of federal-provincial relations, regional development, environmental policies and Canadian-American problems. Consideration will be given to different diagnostic and prescriptive interpretations.
Professor Sabetti

160-322A REFORM AND REVOLUTION IN SOUTH ASIA. (3 credits). Modernization tasks, traditional and colonial legacy, social and political framework, reform strategies and system performance, competing elites and ideologies, revolutionary movements and their prospects.
Professor Nayar

160-323B POLITICS AND GOVERNMENT IN EAST ASIA (CHINA AND JAPAN.) (3 credits). A survey of traditional and modern political society in China and Japan. Special emphasis is placed on governmental policy and institutions in relation to ideology in the Peoples' Republic of China and post-1945 Japan.
Professor Noumoff

160-324D POLITICS AND GOVERNMENT IN AFRICA. (6 credits). The government and politics of African states south of the Sahara with reference to traditional political systems, colonial policies, nationalism, and the problem of nation building.
Professor Kunz

160-325D GOVERNMENT AND POLITICS OF THE UNITED STATES. (6 credits). A survey of the American political system, with emphasis on the constitutional and philosophical setting, the institutions and their interactions, the political process, public policy issues, and political change.
Professor Waller

* **160-327A THE PRINCIPLES OF PUBLIC ADMINISTRATION.** (3 credits). An outline of the basic concepts employed in public administration will include organizational structure and behaviour, the concept of management and personnel development, the decision-making processes and the problems of change and innovation. The subject matter will be general although references will be made to Canadian examples.

160-328D EUROPEAN GOVERNMENT AND POLITICS. (6 credits). First Semester: Europe as a case of political development. Analysis of the impact of varying treatments of four problems — agriculture, the church, the nation state, and industrialization — on contemporary political systems. Second Semester: How do the "bourgeois democracies" differ in the 20th century? Exploration of relationship between certain characteristics of the political system — parties, legislative-executive relations, bureaucracy, sub-national governments, functional representation — and policy outputs, focusing on the economy, and class structure. The focus in both semesters will be on France, Germany, Great Britain and Italy.

160-329A THE POLITICAL SYSTEM OF THE U.S.S.R. (3 credits). The course will be a study of Soviet politics: its roots in the past; its formative revolutionary experiences; the major domestic strategies which have been pursued under Lenin, Stalin, Khrushchev, and contemporary leaders; the concomitants of these choices in different spheres, for example in culture, in the economy, in organizational life.
Professor Haskel

160-332D NON-WESTERN POLITICAL PHILOSOPHY. (6 credits; Prerequisite: 160-231D or consent of instructor). This course will concentrate on the major political-philosophical traditions of China, India, Islam and Africa. Students are required to have a background in political philosophy of one of the regions under consideration. Particular emphasis will be placed on the relationship between the

underlying political/philosophic culture and its impact upon contemporary political forms.
Professor Noumoff

160-333A HISTORY OF POLITICAL AND SOCIAL THEORY (I). (3 credits; Recommended: 160-231D). This course will explore the major themes and writers in Political Theory from the dawn of Greek political consciousness through the writings of St. Augustine. The political ideas of Hesiod, Thucydides, Plato, Aristotle, the Hellenistic philosophers, Hebrew political thought and prophecy, the Christian revolt against Classicism and the early church fathers will be explored through the significant texts of this period.

160-334B HISTORY OF POLITICAL AND SOCIAL THEORY (II). (3 credits. Prerequisite: 160-231D). Political theory of the Middle Ages and the early modern period until the Enlightenment. This course will deal with the Medieval writers and those of the early modern period up to and including the Enlightenment: e.g. Aquinas, Marsilio, Machiavelli, the Reformers, Hobbes, Locke, Montesquieu, Voltaire, d'Holbach, Bentham.
Professor Sarf

157-336B QUEBEC AND CANADA. (3 credits). How do French and English-speaking Canadians perceive one another; mutual stereotypes; common images; cultural differences between the two groups; English-Canadian interpretations of the Quiet Revolution; political aspects of linguistic conflicts. (A reading knowledge and a minimal ability to understand spoken French are required; writing and speaking ability are not required).
Professor Cloutier

160-337B CANADIAN PUBLIC ADMINISTRATION. (3 credits; Prerequisite: at least one other course in Canadian government or politics). An analysis of the organization and practice of Canadian Public Administration at the federal and provincial level. Special attention will be given to techniques and processes of administration, governments as employers, the policy role of task forces and ministries of state, the delivery of public services in a bilingual Dominion, representative bureaucracy and Dominion-provincial administrative relations.
Professor Sabetti

160-340D POLITICS AND FOREIGN POLICY IN THE ARAB WORLD. (6 credits; a previous course on the politics of developing countries and/or on the analysis of foreign policy or international systems would be helpful but not required). The first part of this course will examine the societies, regimes and major political forces in the eastern Arab world (Egypt, Fertile Crescent area, Arabian Peninsula). The second part will examine the foreign policies and behaviour of the Arab states in three areas: Inter-Arab relations, Arab-Israeli relations, Arab-Great Powers relations. The course will also include a simulation dealing with current foreign policy problems in the Middle East. (Not open to students who have taken Political Science 160-348A).
Professor Noble

* **160-343B CONTEMPORARY INTERNATIONAL SYSTEMS:** LATIN AMERICA. (3 credits; Prerequisite 160-319D or consent of instructor). An examination of the evolution of the inter-American system since the turn of the century. Particular attention will be given to the role of the United States in the dynamics of the system as illustrated by case studies including Cuba in 1959 and Santo Domingo in 1965. The role of Canada in the system will be studied with regard to the OAS and regional economic relations.
Professor Bruneau

* **160-344A CONTEMPORARY INTERNATIONAL SYSTEMS: EUROPE.** (3 credits; Prerequisite: 160-244A or 160-245B or consent of instructor. 160-346A would be a helpful preparation for this course). An examination of the evolution of the European system since 1945 focusing on three problem areas — East-West relations, the Atlantic Alliance and West European integration. Special attention will be paid to the politics of the U.S., Britain, France and West Germany. Part of the course will consist of a simulation dealing with current foreign policy problems in Europe.
Professor Noble

* **160-345A INTERNATIONAL ORGANIZATION.** (3 credits). This course will focus on the United Nations — its performance and problems. Special emphasis will be placed on three of its roles: as an agent for conflict management; as a forum for interest articulation and as a source of pressure to redistribute values, wealth and skills.
Professor Steinberg

* **160-346A THE FOREIGN POLICIES OF THE SUPER POWERS.** (3 credits; Prerequisite: 160-244A). An analysis of American and Soviet foreign policies within the context of the major conceptual approaches to foreign policy behaviour. Special emphasis will be placed on the examination of similar patterns of behaviour, i.e. cold war politics, the arms race, hegemonial behaviour, etc., with a view to uncovering the major explanatory variables and comparing them.
Professor Steinberg

160-347A THE POLITICS AND FOREIGN POLICY OF ISRAEL. (3 credits). This course will focus on the political system of Israel and her foreign policy since 1948. It will explore her political culture, parties, the electoral system and election results, political leadership, the constitutional problem, etc. The second half of the course will analyse the setting for policy choices; party programs and interest group pressures; decision-makers and their images; and the process of formulating and implementing decisions. Several important foreign policy

issues will be examined to illuminate the structure and process of Israel's behaviour.
Professor Brecher

* **160-348A CONTEMPORARY INTERNATIONAL SYSTEMS: THE MIDDLE EAST.** (3 credits; Prerequisite: 160-244A or 160-245B or consent of instructor. 160-247B would be a helpful preparation for this course). An examination of the evolution of the Middle Eastern system since 1945 focusing on three problem areas: Inter-Arab relations, Arab-Israeli relations, Arab-Great Power relations. Part of the course will consist of a simulation dealing with current foreign policy problems in the Middle East.
Professor Noble

160-349B CONTEMPORARY INTERNATIONAL SYSTEMS AND FOREIGN POLICY: ASIA. (3 credits). A study of the foreign policies of the major Asian powers — China, Japan, India and Pakistan. Emphasis is on student research in the context of a common framework for the study of foreign policy. Focus is on foreign policy goals and behaviour and their relationship to economic and military capabilities, societal characteristics and governmental features.
Professor Nayar

160-363A RADICAL POLITICAL THOUGHT (I). (3 credits). This course will focus on the origins and meaning of radicalism in the 19th century and trace its evolution in this period. A study of the impact of the French Revolution and the dislocations wrought by industrialization will provide background for a close examination of Marx and his Hegelian roots. A close look at anarchist theories and critiques will close the work of the first term.
Professor Sarf

160-364B RADICAL POLITICAL THOUGHT (II). (3 credits). The transformation of Marxist and anarchist theory in response to new theoretical and practical problems in the 20th century is our major focus. Such thinkers as Lukacs, Gramsci, Marcuse and Habermas will be studied in depth. The rise of "new left" radicalism and its significance in the era of technology will be probed.
Professor Sarf

* **160-365B DEMOCRATIC THEORY.** (3 credits; Prerequisite: 160-231D and either 160-211D or 160-221D). This course will discuss the problem of democracy in modern political philosophy and provide an extended comparison between Rousseau, de Tocqueville, and Nietzsche.

157-370A QUEBEC 1960-1970: THE QUIET REVOLUTION. (3 credits). The origins of the Quiet Revolution; the major actors; its political, economic, social and cultural components; structural changes during the 1960-66 period; the question of violence and terrorism; the end of the Quiet Revolution; the reaction of English-Canada; the impact of this period of rapid change. (A reading knowledge and a minimal ability to understand spoken French are required; writing and speaking ability are not required).
Professor Latouche

157-406B CULTURE, COUNTER-CULTURE AND POST-INDUSTRIALISM IN QUEBEC. (3 credits). The nature and origins of the post-industrial society; its applicability to Quebec and Canada; the role of culture in the hegemonic struggle; counter-culture as reaction; traditional vs. industrial and post-industrial culture in Quebec; radical and liberal interpretations of the youth and ecological movements. (A reading knowledge and a minimal ability to understand spoken French are required; writing and speaking ability are not required).
Professeur Latouche

* **160-413A CRITICAL POLITICAL SCIENCE.** (3 credits). The course will consider the state of the discipline of political science, the political behaviour of masses and elites and their respective roles in western democracies, the control and the political message of the mass media, and relationship of business to politics. Major political studies will be criticized and evaluated; alternative interpretations and explanations of data will be offered.

160-415B POLITICAL PARTIES. (3 credits; Prerequisite: One other course in Comparative Government). The course will explore various approaches to and models of political parties and party systems, and apply them to party systems in different societies. Among the models to be considered are those of Maurice Duverger, R. Michels, Samuel Eldersveld, Anthony Downs, W.H. Riker, Seymour Lipset and Stein Rokkan.
Professor M. Stein

* **160-416B POLITICAL SOCIALIZATION.** (3 credits). The following topics will be considered: 1) Theoretical approaches and conceptual frameworks; 2) the content and timing of political socialization; 3) agents and mechanisms of socialization; 4) role of early learning on later life behaviour; 5) approaches to the study of political leadership and elite socialization; 6) system level implications of political socialization; 7) problems and issues in the study of political socialization.

* **160-417B THE MILITARY AND POLITICS.** (3 credits; Prerequisite: 160-211D or consent of the instructor). Identification and comparison of the political and socio-economic roles played by professional military establishments in both the relatively modernized and the relatively non-modernized societies. The course will focus on the dynamics and impact of the military-industrial complex in the United States and Canada and on the significance of military coups and the performance of military regimes for the process of political modernization. The contributions of Janowitz, Huntington, Pye, Johnson, Lee, Bienen and Hurewitz will be considered.
Professor Latouche

* **160-418A ELITES AND POLITICS.** (3 credits; Prerequisite: At least one course in Canadian or Comparative Government and Politics). A critical examination of the major theoretical approaches to the study of elites (political, economic, intellectual, media, bureaucratic) and politics, and an evaluation of elite studies of Quebec, Canada, the United States, Britain, France, and other societies. Research into problems of elites in different societies will also be conducted.
Professor M. Stein

160-421B PROBLEMS IN CANADIAN POLITICS AND GOVERNMENT. (3 credits. Prerequisites: 160-221D and either 160-320A or 160-321B, or permission of the instructor). This seminar will enable advanced students to deal with selected problems of Canadian socio-economic and political structures; political culture; constitutional development; and governmental structure. In 1976-77 the course will deal with the response of socio-political movements to changes in the political and economic environment in Canada since Confederation.
Professor Mallory and Stein

* **160-422B HONOURS SEMINAR: THE POLITICS OF DEVELOPING AREAS.** (3 credits; Open to honours students and to other advanced undergraduates with good records with the permission of the instructor; Prerequisite: At least one course in the politics of developing areas). This seminar will deal with selected topics in the fields of political development and the politics of developing areas. Students will be expected to undertake a research project.
Professor Kunz

* **160-423B POLITICS IN ITALY.** (3 credits). A critical examination of Italian political life and problems through political science and imaginative literature. Special emphasis on the nature and consequences of uneven political and economic development, the place and strategies of Fascist and Marxist parties, the relationship between church and state, the politics of stable instability and the Europeanization of Italian political problems.
Professor Sabetti

160-424A HONOURS SEMINAR: THE POLITICS OF DEVELOPED AREAS. (3 credits; Open to honours students and to other advanced undergraduates with good records with the permission of the instructor; Prerequisite: At least one course in the politics of developed countries). This seminar will deal with selected topics in the politics of developed countries. In 1976-77 the topic will be the Political Development and Contemporary Politics of Scandinavia. The formative influences on the different Scandinavian countries will be compared both to each other and to other European countries; the impact of such differences on contemporary politics and policies will also be examined.
Professor Haskel

160-425A SELECTED TOPICS IN AMERICAN POLITICS. (3 credits; Prerequisite: 160-325D). This course will involve a detailed analysis of a limited area of American politics and government. The topic for 1976-77 will be an investigation of the effects of mass inputs on public policy formation. The extent to which popular demands constrain policy makers in areas such as economic policy, social policy and energy policy will be explored. Conflicting models of policy influence will be evaluated. This course is offered in alternate years.
Professor Waller

160-426B POLITICAL ATTITUDES AND BEHAVIOUR IN QUEBEC. (3 credits). The major ideological currents in contemporary Quebec politics: socialism, federalism, independentism; political role of the trade union; the rise of popular groups; special attention will be given to the emergence of the independentist movement, its program, the socio-economic basis of its electoral support. (A reading knowledge and a minimal ability to understand spoken French are required; writing and speaking ability are not required.
Professor Latouche

160-428B FRENCH POLITICS. (3 credits; Prerequisite: Permission of instructor and some prior related course required, i.e. French History, Political Theory, and/or Comparative Politics). Analysis of French politics, both historical and contemporary. The course will search for regularities in French political life, for things which make the French system unique, and things which make it resemble the systems of other countries. Special attention will be paid to the problem of competing interpretations of French politics — economic, cultural, ideological, institutional, international.

* **160-429B THE POLITICS OF SOUTH AFRICA.** (3 credits). This course will discuss the historical background, component cultures, social structure, social change, conflict, and political institutions and practices of South Africa.
Professor Shingler

160-433A HISTORY OF POLITICAL AND SOCIAL THEORY (III). (3 credits; Prerequisite: 160-231D). This course will deal with the political theories which underlay the French revolution, and with those to which it gave rise. It will begin with a discussion of the theory of Enlightenment and with a closer study of Rousseau. It will then continue with an examination of different reactions to the Revolution: those of Burke, de Maistre, and later that of de Tocqueville. It will also examine the development of the themes launched by Rousseau and the French Revolution by the German Idealists, Kant, Fichte, Hegel. Finally it will examine the revolutionary streams which rise in the period: Marx and Marxism, and anarchist thought.
Professor Sarf

160-434B HISTORY OF POLITICAL AND SOCIAL THEORY (IV). (3 credits. Recommended:

160-231D.) A consideration of selected writers and themes of late 19th and 20th century political theory. Such topics will include the theoretical foundations of scientism and technology, the existentialist revolt, the political ideas of Freud and other depth psychologists, the theoretical foundations of modern social science, elite theory and implications for democracy, and other themes in political and social theory.

160-453A THE HISTORY OF BRITISH CONSTITUTIONAL THOUGHT. (3 credits; Prerequisite: 160-231D). A survey of the historical development of the British Constitution and the interpretation attendant upon its growth. Documents and writing to be studied include the Magna Carta, the Petition of Right, and the Bill of Rights, and the commentaries of Fortescue, Bracton, Coke, Selden, Blackstone, Burke, Bagehot and Dicey.
Professor Shingler

160-454B THE HISTORY OF BRITISH POLITICAL THOUGHT. (3 credits). An historical and textual examination of selected writers and themes in British social and political thought drawn from: Shaftesbury, Bolingbroke, Swift, Pope, Edmund Burke, Wordsworth and Coleridge.
Professor Shingler

* **160-460B POLITICAL IDEOLOGIES.** (3 credits). A study of the origins, content and functions of ideologies, and their relationship to political action and institutions, through a comparative survey of some of the major political ideologies in the modern world.
Professor Kunz

* **160-461A HONOURS SEMINAR: POLITICAL THEORY.** (3 credits; Open to honours students and to other advanced undergraduates with good records with the permission of the instructor). An in-depth examination of selected topics in political philosophy.

* **160-465A THE POLITICS OF PLANNING AND POLICY MAKING.** (3 credits). This course will take up: (1) cultural, ideological, political and organizational influences on policy-making; (2) problems in the logic of policy-making. Students will focus on a problem in policy-making in such areas as science, regional development, language, economics, management, etc.
Professor Haskel

160-466A PUBLIC POLICY ANALYSIS. (3 credits). This course will attempt to indicate some of the considerations particularly relevant to public policy analysis and how public policy analysis can be applied to a study of contemporary problems. It will first present the principal traditions in political science concerned with the study of public policy and the theoretical developments in sociology of knowledge, cybernetics, law, public finance, Canadian political economy and educational psychology which have special significance for the study of public policy. The approaches that are developed will then be applied to analyze political problems in North American and Western European Societies and to conceptualize alternative solutions to these political problems. The topics for analysis will include consumers in the modern regulatory state, local-provincial-national relations in policy implementation, natural resources and political development as well as political corruption.
Professor Sabetti

* **160-467B SCIENCE, TECHNOLOGY AND POLITICS.** (3 credits; Recommended: 160-465A and/or 160-466A). In this course the relationship between science and technology on the one hand and government and politics on the other will be examined. Some of the topics include science as a political phenomenon, science and public policy, scientists as political actors and technology and political thought. Offered in alternate years.
Professor Waller

* **160-471A THE ANALYSIS OF RAPID SOCIAL CHANGE.** (3 credits; Prerequisite: For majors and honours students only, or consent of instructor). This is a seminar in which various theories of revolution will be analysed with reference to the empirical reality of revolutionary phenomenon. The course will follow a comparative perspective with the goal being evaluation of revolutionary explanation and an attempt to formulate alternative theories.
Professor Bruneau

160-475B HONOURS SEMINAR: INTERNATIONAL POLITICS. (3 credits; Open to honours students and to other advanced undergraduates with good records with the permission of the instructor; Prerequisite: At least one course in International Politics beyond the 200 level). A research oriented seminar dealing with selected topics in the field of International Politics and Foreign Policy. In 1976-77 this course will examine cases of bargaining in politics, domestic and international, contemporary and possibly historical. With the aid of tools in political economy and comparative politics, it will attempt to draw generalizations about the similarities and differences among these cases.
Professor Haskel

160-490A/160-491B INDEPENDENT READING AND RESEARCH. (3 credits each). Final year honours students wishing to pursue a specialized interest will be allowed to undertake a program of independent reading and/or research in that area under the supervision of a member of staff. Such programs may be undertaken by students either individually or in small groups. It is the responsibility of the student(s) to obtain the instructor's consent prior to registration.

160-494A HONOURS SEMINAR: INTERNATIONAL: POLITICS. (3 credits; Open to honours students and to other advanced undergraduates with good records with the permission of the instructor). A seminar for advanced undergraduates in

international relations in basic principles of research design. Students will be introduced to the concepts of research design and research methods. They will prepare a research report, using primary materials, on a problem in international relations. Students will also assist in the teaching of the introductory course, so that they will both teach and do research in international relations.

Professor J. Stein

PSYCHOLOGY (204)

Stewart Biological Building,
Room W8/1,
Telephone: 392-4708.

Psychology is the scientific study of man's mind and behaviour. It is both a social and biological science. As a social science, psychology studies man in his interactions with other members of his own species. As a biological science, it regards man as the product of evolution and so studies him in biological perspective, comparing and contrasting his behaviour with that of other species.

The data of psychology are collected within the psychological laboratory by the use of experimental methods in the study of behaviour, and outside the laboratory by systematic observation of the behaviour of man and lower animals. The combination of experimentation and observation results in a knowledge of man's behaviour as he perceives his world, learns, directs his behaviour towards certain goals, and reacts to stress, frustration, and other men. Experimentation, laboratory techniques, observational procedures, measurement and statistical methods are important tools of the psychologist in the study of behaviour.

Psychology has many interdisciplinary aspects. The study of many psychological problems involves knowledge drawn from other disciplines such as biology, physiology, linguistics, sociology, philosophy, and mathematics. For this reason a student with varied interests can frequently find a place for these interests in psychology.

Psychology is a young science so that explanations of the processes underlying observed phenomena are often theoretical and speculative. The major objectives of psychological study are to reduce the discrepancy between theory and fact and to provide better answers about why man thinks and behaves as he does.

Although a number of undergraduate courses in psychology have applied implications, applied training is in no way the purpose of the undergraduate curriculum. The purpose of that curriculum is to introduce the student to an understanding of the basic core of psychological knowledge, theory, and method, regardless of questions of practical application.

The B.A. or B.Sc. with a Major or Honours degree in psychology is not a professional qualification. It does not qualify the individual to carry on professional work in psychology. In the Province of Quebec the minimum requirement for membership in the Corporation of Psychologists of the Province of Quebec, the professional association governing the work of psychologists in the Province, is an M.A. or M.Sc. degree, or other equivalent degree.

Although requirements for admission to graduate studies in psychology vary from one university to another, both the Honours and Major degrees in psychology may qualify the student for admission to many graduate schools, provided of course that sufficiently high marks are obtained.

The essential difference between the Honours and the Majors program is that higher standards are required of Honours students. Honours students also have an opportunity to work in small groups closely with staff members.

PSYCHOLOGY ORIENTATION

All students entering Psychology undergraduate programs are required to attend an orientation meeting that will be held at 10:00 a.m. on Wednesday, September 1 in Room S1/4 of the Stewart Biology Building for Arts students, and at 10:00 a.m. on Thursday, September 2 in Room S1/4 of the Stewart Biology Building for Science students. Before attending the meeting, students must read the Announcement of the Faculties of Arts and Science and the 1976-77 edition of the Psychology Department Handbook. The latter will be available in the University Bookstore from about the beginning of July. Out-of-town residents can have a copy of the Handbook mailed to them upon written request to the Psychology Department.

The main purpose of the orientation meeting is to instruct students about filling in the Study Plan Forms and to provide further information about Psychology programs. After the meeting, students can meet individually with advisers in order to have their Study Plan Forms approved for registration. In exceptional cases, students who are unable to attend the orientation meeting may consult an adviser earlier. Call Mrs. Robinson at 392-4694 for further information. Students **must** read the Announcement and the Handbook before seeing an adviser.

PROGRAM INFORMATION

The Psychology Department offers 15 different options in its 54 credit programs. Except where otherwise stated, each of these programs may be taken as Major, Honours or Faculty programs. The differences between these three categories of programs are outlined below. The descriptions of the 11 options available in the B.A. program follow. See page for descriptions of the options available only in the B.Sc. program.

Prerequisites. It is expected that most students who major in psychology will have taken introductory psychology and statistics at the collegial level. In the First year all Major students must take Psychological Statistics (204-305A or B). Those students who have not taken a college level statistics

course must also take Psychology 204-204A or B in addition to the other courses in their program.

A student who has not taken an introductory psychology course at the collegial level may major in psychology by taking Psychology 204-201D in their U1 year and also the courses in Psychological Statistics 204-204A or B and 204-305A or B.

MAJOR PROGRAM

The following options are available in the Major program in Psychology:

1. General Psychology
2. Experimental Psychology
3. Child Psychology
4. Personality and Abnormal Psychology
5. Social Psychology
6. The Psychology of Language
7. Psychology in Relation to Problems in Education
8. Major in Psychology & Philosophy
9. Quantitative Psychology
10. Organizational Psychology
11. Psychobiology

Call the Chief Adviser, Mr. Arnold Rosner (392-4694) to obtain an adviser. In the First year of any of the above programs all Major students take Psychology 204-305A,B. Detailed descriptions of the programs will be found on page . Students majoring in Psychology must obtain a minimum grade of C in all 54 credits required by their program. A grade lower than C may be made up by taking another equivalent course (if there is one), by successfully repeating the course, or by successfully writing a supplemental examination (if there is one).

HONOURS PROGRAM

Honours in Psychology prepares students for graduate study, and so emphasizes practice in the research techniques which are used in graduate school and professionally later on. Honours students take Psychology 204-380D in the first year (normally U2) of their program, and they take Psychology 204-480D and 204-481D in the second year (normally U3). These courses have limited enrolments, and admission to Honours is selective. There is normally room for 30-35 new Honours students each year. Students with a cumulative grade point average of 2.8, or better, are eligible to apply. However, during the past several years it has been possible to accept very few students with averages below 3.5.

Students are accepted into Honours at the beginning of U2, and the two-year sequence of Honours courses continues through U3.

Applications can be obtained from the general office of the Department of Psychology, Room W8/1, Stewart Building. The applications must be completed and returned to the general office by 1 September of the year for which admission to Honours is sought. Candidates will be advised of the department's decision by letter shortly after September 1. For information (other than application forms) about the Honours program, phone Professor Virginia Douglas, Honours Committee Chairman, at 392-4689.

JOINT HONOURS IN PSYCHOLOGY AND LINGUISTICS

Required Courses:

Psychology 204-305A,B, 340A, 341B, 380D, 480D, 481D. Linguistics 104-200A,B, 201A,B, 241B, 350A, 351B, 360A, 361B, 480A.

FACULTY PROGRAMS

A Faculty Program in Psychology is a sequence of courses which represents a lesser degree of specialization than a Major or an Honours program. A Faculty Program may be made up of any of the Major programs with the substitution of 6 credits from U2 Psychology courses for Psychology 204-211D and 204-305A or B. The Joint Program in Psychology and Mathematics is also a faculty program. For further details see program information at the beginning of the Arts section.

PROGRAM DESCRIPTIONS

The courses in the programs are ordered sequentially so that it will normally take three years to complete a program. The Major and Faculty Programs all include 18 credits in each of U1, U2, and U3. Students may, with the consent of their Faculty Adviser, substitute up to 6 credits in a program. Any further changes must be approved by the Associate Dean of the Faculty.

When selecting optional program courses from other departments, it is the student's responsibility to see that he or she has taken the appropriate prerequisites and/or obtained permission of the department where necessary.

None of the B.A. or B.Sc. programs provides professional training. They are all intended to give the student a general academic background in the interest area indicated by their titles. Those who are interested in practising psychology professionally must obtain graduate degrees at least at the Master's level, and should preferably continue on to the Ph.D. The Honours programs are most specifically designed to train students who intend to go to graduate school. However, it is important to remember that admission to graduate studies is highly competitive, and that no degree guarantees entry to advanced study. Students with a Major in Psychology may also, if they have chosen their courses appropriately and obtained high enough standing, be admitted to graduate studies, although they may sometimes be required to complete a qualifying year. Students in Faculty programs who decide to go into graduate study in psychology will most probably have to complete a qualifying year first. Further information about advanced study in Psychology may be obtained from the American Psychological Association's Handbook on the topic. It is usually on sale in the University Bookstore.

COURSES IN THE FACULTY OF MANAGEMENT

The Faculty of Management offers the following courses in the Behavioural Sciences: 280-221A, Behavioural Science I (3 credits); 280-222B, Behavioural Science II (3 credits); 272-420A, Group Dynamics and Interpersonal Relations (3 credits); 272-421B, Strategies of Management and Organization Development (3 credits); 275-458A, Consumer Behaviour (3 credits); 275-495A, Marketing Research (3 credits).

Where appropriate to a student's program, and with the permission of the program adviser, one or more of these courses may be taken for credit by students enrolled in programs in psychology. Programs in such fields as personnel management, administrative behaviour, and consumer behaviour are also available to students through a cooperative arrangement between the Faculty of Management and the Department of Psychology.

GRADUATE STUDY

The adviser to Major students will, whenever possible, assist students in planning their courses to coincide with their professional aims. Most graduate schools require not only a record of high achievement, but also adequate performance on some entrance examinations such as the Graduate Record Examination and the Miller Analogies Test, as well as letters of recommendation.

MAJOR PROGRAM

General Psychology Option

This program is intended to give maximum flexibility to students in choosing their own courses. In this 54 credit program at least 36 and as many as 54 credits must be in psychology courses. The program must include Psychology 204-305A,B and 9 credits in 400 level psychology courses. If fewer than 54 credits in psychology are taken, then the difference between that number and 54 must be made up by selecting courses in other departments from the following list (since the list may not be up to date in September, the relevant department should be consulted before choosing). Students in the Faculty of Science who select arts courses from this list must have a total of at least 54 credits in science courses among the 90 credits for the B.Sc. degree. Students are expected to have whatever prerequisites are described in the Announcement.

Anatomy 504-321A; Anthropology 151-202B, 203A, 206A, 228A, 303B, 305B, 312A, 316A, 321B, 428B, 437B, 440A; Biochemistry 507-455B; Biology 177-111A,112B, 201D, 205D, 274A,B, 303A, 325A, 326B, 351B, 352A, 370B, 372B, 385B, 386A, 391A, 392B, 394B, 471B, 488A, 493B; Computer Science 308-220A,B; Geography 183-214A, 215B, 217B, 300B; Linguistics 104-200A,B, 104-201A,B, 230A, 241B, 321B; Mathematics 189-120A,B, 121A,B, 217A, 218B, 223A, 224A, 314A,B, 317A, 318A, 323A,B, 324B, 327B, 328B, 417A, 423A, 424B, 447B; Philosophy 107-210A, 211B, 313D, 321A, 322B, 510D; Physiology 552-201A, 202B, 211D; Sociology 166-210A or 212A, 222A, 223B, 225B, 227A, 247B, 303A, 309A, 417B.

Experimental Psychology Option

U1 Courses: Psychology 204-211D, 305A-B; plus 12 credits selected from 200 and 300 level courses for which you have the prerequisites.

U2 Courses: At least 9 credits from: Psychology 204-300A, 301B, 302A, 303B, 308D plus enough credits from the following list to make up 18: Psychology 204-311A, 309B, 310D, 311A, 335A, 336B, 340A, 341B, 342A.

U3 Courses: Psychology 204-400B, 403A plus 12 credits selected from: Psychology 204-401D, 416A, 417B, 403B, 404B, 406B, 407A, 423A, 424B, 425A, 430B, 450D.

Note: The former cognition and thinking option has been subsumed under the Experimental Psychology Option. Students particularly interested in the broad area of cognitive psychology (human problem solving, intelligent action, language, thinking, etc.) as a background for education, assessment of intelligence, mental retardation, and so on, are encouraged to take the following courses:

Psychology 204-310B, 302A, 303B, 311A, 340A, 341B, 401D, 404B, 407A, and 425A. They are also strongly encouraged to take courses in linguistics, philosophy (especially logic), and mathematics (eg: calculus, algebra, mathematical logic, computability and mathematical linguistics.)

Child Psychology Option

Students are encouraged to choose their electives from outside of the Psychology Department.

U1 Courses: Psychology 204-211D, 305A,B, 304D; plus 3 credits selected from: Psychology 204-300A, 301B, 302A, 303B, 315B; plus 3 credits, selected from Sociology, Anthropology Linguistics and Biology.

U2 Courses: Psychology 204-413D, or 414D; plus 6 credits selected from Psychology 204-300A, 301B, 302A, 303B, 306A, 315B; plus 3 credits selected, plus 3 credits, from Sociology, Anthropology, Linguistics and Biology.

U3 Courses: Psychology 204-413D, or 414D; plus 6 credits, from any 400 level courses in psychology; plus 6 credits, from Sociology, Anthropology, and Biology.

Personality and Abnormal Psychology Option

U1 Courses: Psychology 204-305A,B; plus 15 credits to be selected from: Psychology, 204-201D, 211D and courses selected, in consultation with adviser, from Biology, Sociology, Anthropology and Philosophy.

U2 Courses: Psychology 204-337A, 338B; plus 12 credits to be selected from: Psychology 204-300A, 301B, 302A, 303B, 304D, 308D, 309B,

310A, 311A, 313A, 332A, 404B; and/or selected subjects, in consultation with adviser, from Biology, Physiology, Sociology and Philosophy.

U3 Courses: 18 credits from Psychology 204-310D, 400B, 402D, 403A, 405D, 406A, 418B, 419B, 428B, 430B, 457B, 408A, 412A, 433B, 451D, 458B, 434B, 491D.

Social Psychology Option

U1 Courses: Psychology 204-305A,B plus 6 credits selected from: Psychology 204-201D, 300A, 301B, 302A, 303B; plus 9 credits selected, in consultation with adviser, from such departments as Anthropology, Sociology, Economics, Political Science, Philosophy and Linguistics.

U2 Courses: Psychology 204-330A, 331B plus 6 credits selected in consultation with adviser from Psychology 300 level courses.

U3 Courses: Psychology 204-411D; plus 6 credits selected in consultation with adviser from Psychology 400 level courses; plus 6 credits selected in consultation with adviser from such departments as Anthropology, Sociology, Economics, Political Science, Philosophy and Linguistics.

NOTE: The total number of psychology credits required for this program is 39 out of 90. The professors in charge of the program feel that this proportion provides a sound coverage of the field and that the student would be wise to choose his alternatives from a wide variety of disciplines in the University.

Psychology of Language Option

NOTE: Honours students will have a timetable conflict between Linguistics 360A, 361B, and Psychology 480D if all are taken in the U3 year and it is suggested that the Linguistics courses be taken in the U2 year.

U1 Courses: Psychology 204-305A,B; Linguistics 104-201D; plus 3 credits to be selected from the following optional courses: Linguistics 104-230A, 241B; Philosophy 107-210A, 211B.

U2 Courses: Psychology 204-340A, 341B; Linguistics 104-350A plus 9 credits to be selected from the list of optional courses under U1 or from the following list: Psychology 204-214D, 301B, 302A, 303B, 304D, 310A; Linguistics 104-321B, 351B; Philosophy 107-317A, 318B.

U3 Courses: Psychology 204-425A, 455D; Linguistics 104-360A, 361B; plus 3 credits to be selected from optional courses listed under U1 and U2 or: Psychology 204-401D, 404B, 406B, 400B, 403A, 413D; Linguistics 104-430A or 431B, 461B, 480A; Philosophy 107-483A, 484B; Mathematics 189-328B; Anthropology 151-440B; Sociology 166-217A, 217B.

Psychology in Relation to Problems in Education

U1 Courses: Psychology 204-305A,B; plus 3 credits selected from Anthropology 151-228A; Educational Psychology 414-205A,B, 414-208A,B, 294B; plus 12 credits from U2 psychology courses (this may include Psychology 204-211D.

U2 Courses: Psychology 204-301B, 304D, 302A, 303B, 330A, 204-310A, 313A, 332A, 337A, 341B; Anthropology 151-428B; Educational Psychology 414-305B, 340A,B, 337A,B, 394A.

U3 Courses: Psychology 204-406B, 410D, 451D; Educational Psychology 414-402D, 446X or Y, 456D, 492A,Y, 414-495B.

Major in Philosophy and Psychology

U1 Courses: Psychology 204-305A,B; Philosophy 107-200D, plus 9 credits to be selected from: Philosophy 107-340D, 341D, 210A; Psychology 204-201D, 211D.

U2 Courses: Philosophy 107-301A, 302B; Psychology 204-302A, 303B; plus 6 credits to be selected from: Philosophy 107-350D, 351D, 313D; Psychology 204-340D, 301B, 337A, 330A, 332A.

U3 Courses: Philosophy 107-321A, 494B; Psychology 204-400B, 403A; plus 6 credits to be selected from: Philosophy 107-493A; Psychology 204-425A, 404B, 401D, 403A.

Quantitative Psychology Option

U1 Courses: Mathematics 189-222A,B, 245A,B; Computing Science 308-200A,B, or 220A,B; plus 6 credits to be selected from Psychology 204-201D, 302A, 303B.

U2 Courses: Mathematics 189-323A, 324B; plus 3 credits selected from Mathematics 189-314A,B, 317A, 318A, 327B, 328B; plus 9 credits selected from Psychology courses (other than 204-204A,B; 305A,B), which must include Psychology 204-302A, 303B if not taken in U1.

U3 Courses: Psychology 204-335A, 336B; Mathematics 189-423A, 424B, 417A, 447B; plus 6 credits selected from psychology courses other than Psychology 204-204A,B; 305A,B.

Organizational Psychology Option

U1 Courses: Psychology 204-301B, 300A, 305A,B; Sociology 166-217A; Management 280-221A,B or Psychology 204-330A. (For Organizational Psychology majors, this course is a prerequisite to all other Management courses. Hence, this must be taken in U1 year, winter term.)

U2 Courses: Psychology 204-331B; Plus 6 credits to be selected from: Psychology 204-302A, 303B, 406B, 309B, 403A, 433B, 332A; Plus 9 credits from the following courses: Management 280-222B*; Management 272-420A*; Management 280-323B, 280-352A,B; * Both 280-222B and 272-420A are Psychology courses offered to Management students.

U3 Courses: Psychology 204-411D; Plus 6 credits selected from: Psychology 204-400B, 450D, 401D; Plus 9 credits selected from: Management

272-423A, 425A, 421B, 422A; Management 275-451A,B, 452A; Management 276-465A.

PSYCHOBIOLOGY OPTION

U1 Courses: Psychology 204-305A,B plus 15 credits selected from: Psychology 204-201D*, 211D, 300A, 301B; Biology 177-205D; Physiology 552-211D. * Must be taken by students who have not taken two terms of introductory psychology at the CEGEP level or its equivalent. May not be taken by students who have met this requirement.

U2 Courses: Psychology 204-308D plus at least 9 credits selected from: (6 psychology credits from U1 list may be substituted) Psychology 204-302A, 303B, 306A, 311A, 337A, 342D; plus at least 6 credits selected from: Biology 177-201D, 305A, 318B, 386A, 389B, 391A, 392B; Anatomy 504-321A; Computer Science 308-220A,B.

U3 Courses: At least 6 credits selected from: Psychology 204-422A, 423A, 424B; plus 12 credits selected from: (6 credits from the U2 list may be substituted) Psychology 204-404B, 407A, 430B; Biology 177-488A, 493B; Pharmacology 549-5461D.

Course descriptions: See Psychology in Science section of Announcement.

RELIGIOUS STUDIES (260)

Professors — C.J. ADAMS; S.B. FROST; G. JOHNSTON; J.C. KIRBY; J.C. McLELLAND
Associate Professors — J.A. BOORMAN; R.C. CULLEY; D.J. HALL; H.K. MARKELL; M. PEASTON; D.R. RUNNALLS; R.W. STEVENSON
Assistant Professors — E.K. MALLOY-HANLEY; K.K. YOUNG
Visiting Professor — G. MACGREGOR

William and Henry Birks Building, 3520 University Street.

Courses are offered to students in other Faculties and Schools in the University through the Faculty of Religious Studies. They may be taken as individual electives, or through the Major and Honours programs in Religious Studies which can lead to teaching, social work, professional religious service, and graduate study in religion or theology. Religious Studies courses may be usefully combined with other concentrations, e.g. Art History, Classics, Jewish Studies, History, Philosophy

For general information on courses and Major and Honours programs, consult the Adviser, Professor Stevenson, Room 108, 392-4835. For specific course information consult the instructor.

Majors and Honours students must consult the Adviser prior to registration each year.

MAJOR IN RELIGIOUS STUDIES

A Major in Religious Studies consists of 54 credits as follows:

1) At least 36 credits are to be chosen from the Religious Studies courses described below. (Major Students may choose their courses from the list below; but also from the B. Th. program in the Faculty of Religious Studies and certain courses in the Jewish Studies Program, after consultation with the Adviser.) Students must choose at least one full course (6 credits) in a tradition other than their own.
2) Up to 18 credits to be chosen from approved Related Courses (see below).

INTERDISCIPLINARY MAJOR

The Interdisciplinary Major programs may be arranged in consultation with the Adviser. Joint programs are in operation between Religious Studies and Classics, Philosophy and Art History.

HONOURS IN RELIGIOUS STUDIES

The Honours program in Religious Studies offers a degree of analysis and concentration beyond that of the Major program through course work, intensive research and discussion with peer groups.

There are no prerequisites for entry to the program which will normally be at the beginning of the first year. Students must maintain a GPA of 2.8; or 3.5 for First Class Honours.

The program consists of a minimum of 66 credits chosen as follows:
1) At least 48 credits from the Religious Studies courses described below. (Honours students may also choose from the B.Th. program in the Faculty of Religious Studies Announcement, and certain courses in the Jewish Studies Program, after consultation with the Adviser. In special cases, permission may be given for admittance to graduate seminars in the Faculty of Religious Studies.) Among these the following are required: 201A-202B and 252A-253B in U1; the Honours Colloquium (6 credits) in U3; one course (6 credits) in a religious tradition other than the student's own in U2 or U3.
2) Up to 18 credits from approved Related Courses (see below).

JOINT HONOURS PROGRAMS

Programs may be arranged in consultation with the Adviser.

COURSE DESCRIPTIONS

160-201A RELIGIOUS TRADITIONS OF THE ANCIENT NEAR EAST I. (3 credits). The religions of ancient Egypt, Mesopotamia and Canaan; a brief consideration of religion in general, its origin, nature and study; a consideration of the geographical, historical and cultural conditions which influenced religious expression; myth and ritual. (Not open to students who have taken 260-200D).
Professor Runnalls

260-202B RELIGIOUS TRADITIONS OF THE ANCIENT NEAR EAST II. (3 credits; Prerequisite:

260-201A or its equivalent). The religion of ancient Israel in the setting of the Ancient Near East; from Abraham to Ezra; continuity and discontinuity with Egypt, Mesopotamia, and Canaan. (Not open to students who have taken 260-200D).
Professor Runnalls

260-252A HISTORY OF RELIGION I. (3 credits). An introduction to the subject, a consideration of tribal religions, a survey of the main elements of Hinduism and Buddhism in India. (Not open to students who have taken 260-114D or 251D).
Professor Young

260-253B HISTORY OF RELIGION II. (3 credits). An introduction to the tradition of the Far East: the Confucianist, Taoist, and Buddhist traditions of China and the Shinto and Buddhist traditions of Japan. (Not open to students who have taken 260-114D or 251D).
Professor Young

260-280D NEW TESTAMENT GREEK. (6 credits). An introduction to the language.
Professor Kirby and Staff

260-300A POST-BIBLICAL JEWISH TRADITION. (3 credits). The origins of Rabbinic Judaism: a survey of Jewish history and thought from Ezra to the Tannaim; oral tradition; Torah interpretation in the Mishnah and Midrashim.
Professor Runnalls

260-301B POST-BIBLICAL JEWISH TRADITION. (3 credits; Prerequisite: Religion 300A or the consent of the instructor). The religion and literature of sectarian groupings: Apocalyptic thought; Wisdom; Dead Sea Scrolls; Josephus.
Professor Runnalls

260-310D THE NEW TESTAMENT — ITS MAKING AND MEANING. (6 credits). The beginnings of the Christian Movement; the mission and achievement of Jesus. Early Christian Missions and the growth of institutions. Religion 200D is a desirable but not mandatory previous course. Critical approaches studied through modules (about one quarter of the course work).
Professor Kirby

260-320D A HISTORY OF CHRISTIAN THOUGHT. (6 credits). A survey of the development of Christian thought from the post-apostolic period to the present day, in relation to the concurrent cultural and philosophical movements. The work of prominent Christian thinkers, ancient, medieval and modern, will receive special attention.
Professor Hall

260-322A THE ANCIENT CATHOLIC CHURCH (TO A.D. 325). (3 credits). This course covers the growth of the Christian tradition in the period from the reign of Nero to the Council of Nicaea A.D. 325. Special attention is paid to the setting within Roman Imperial History. Lectures are given on the outstanding teachers of the faith.
Professor Johnston

260-323B THE ANCIENT CATHOLIC CHURCH (A.D. 325-604). (3 credits). This course is a continuation of 322A and covers the period from A.D. 325 to 604. Special attention is paid to the development of Christian theology, the Eastern Byzantine Church and the significance of the Papacy.
Professor Johnston

260-335A THEOLOGICAL ANTHROPOLOGY. (3 credits). From within the Christian tradition this course deals with the relationship between a person's anthropological world-view and his/her theological perspective. This includes: 1) Consideration of the God-human relationship in three world-views operative in North America today: 2) Some of the theological implications involved in a shift in these world-views.
Professor Malloy-Hanley

260-338A PERSPECTIVES ON WOMEN IN THE CHRISTIAN TRADITION. (3 credits). A theological and historical study of the perspectives on women operative in the early, medieval and contemporary periods of the christian tradition. The course considers each of these perspectives in relation to the underlying world-views and will be an opportunity to discuss some of the theological consequences each of these perspectives has had on christian tradition in general and some christian women in particular. (N.B.) The course is designed for any students interested in a theological consideration of some of the Christian roots to the questions and issues of the liberation of women in North America.
Professor Malloy-Hanley

260-339B IMAGES OF THE FEMININE — Mythic, Philosophic, and Human — in the Hindu and Buddhist Traditions. (3 credits). The richness (and ambivalence) of feminine imagery can be approached from three perspectives: *mythic* (a study of the portrayal of goddesses and epic figures: Parvati, Sita, Durga, etc.); *philosophic* (a study of material nature, the power to create, wisdom, and compassion) and *human* (a study of mothers, wives, daughters, temptresses, and nuns). The interrelationship of the supreme reality and feminine imagery, the supreme knowledge and its accessibility for women, and the religious paths and their availability for women will be analyzed. (Note: This course is designed for students of Hinduism and Buddhism to acquaint them with the influence of the Tantric tradition on the various Hindu and Buddhist philosophies and for students interested in women and religion).
Professor Young

* **260-340B RELIGION AND THE SCIENCES.** (alternates with 345A). (3 credits).
Professor McLelland

260-345A RELIGION AND THE ARTS. (3 credits). Myths and symbols approached through literary criticism to examine art forms as self-images, social critique and forms of ultimate concern: concentration on Western culture.
Professor McLelland

260-346B MYTH AND SYMBOL IN THE VISUAL ARTS OF HINDUISM AND BUDDHISM. (3 credits). Art as the expression of religious myths, symbols, and concepts and a focus of religious behaviour. Themes such as the Hindu concept of deity will be explored through slides of Visnu, Siva, and the Goddess and will be related to interpretations of iconography, the symbolisms inherent in temple architecture, and religious acts such as rituals, meditation, and visions. The Buddha's life, samsara as man's predicament, and nirvana as man's goal will be discussed and illustrated through the arts of India, Java, China, and Japan. (May be taken for graduate credit with additional readings in the historical periods of Hindu and Buddhist art; graduate course listed as 260-687B).
Professor Young

260-351A PHENOMENOLOGY OF RELIGION. (3 credits). A cross cultural comparison of a religious theme (to vary each year). 1976-77: The Sacred City and the Wilderness. A study of the apprehension of landscape through religious symbols. The beloved places of Vaisnavism, the homeland of the Buddha, Mecca, Jerusalem, and Quebec will be focuses of study in this examination of a common motif: journey to the sacred centre.
Professor Young

260-361A RELIGIOUS BEHAVIOUR. (3 credits). See B.Th. program.
Professor Peaston

260-370B THE HUMAN CONDITION. (3 credits). A critical examination of representative theories about man, his situation and his values in the light of traditional interpretations of Christian anthropology and ethics, together with an attempt to formulate some contemporary clues in response to man's search for meaning.
Professor Boorman

260-380D ADVANCED NEW TESTAMENT GREEK.
(6 credits). Advanced course in the language with reading of selected biblical texts.
Professor Kirby

260-390D HEBREW LANGUAGE. (6 credits). Introduction the language.
Professor Runnalls

260-450D THE ISLAMIC TRADITION. (6 credits). The Islamic Community and the elements of its tradition — scripture, prophet, doctrine, practices, institutions — considered historically and in terms of religious meaning.
Professor Adams

260-451D THE HINDU TRADITION. (6 credits). An introduction to the Hindu religious tradition, its history, faith and practice.
Professor Stevenson

260-454B MODERN HINDU THOUGHT. (3 credits; Prerequisite 260-451D or permission). A study of the developments in religious thought with special reference to Ram Mohan Roy, Dayananda Saraswati, Ramakrishna, Vivekananda, Gandhi, Tilak, Aurobindo, and Radhakrishnan.
Professor Stevenson

* **260-455D BUDDHISM.** (6 credits). (To be given 1977-78.) The history and teachings of Theravada and Mahayana Buddhism in India. The expansion of Theravada Buddhism through South East Asia with special focus on Sri Lanka. The expansion of Mahayana Buddhism with special focus on Japan.
Professor Young

260-456A BUDDHISM. Independent Research and Tutorial. (3 credits). Permission for the course to be granted by the instructor.
Professor Young

260-490D ADVANCED BIBLICAL HEBREW. (6 credits).
Professor Culley

260-496A SPECIAL STUDIES. (3 credits). Topics to be arranged.
Staff

260-497B RESEARCH SEMINAR. (3 credits).
Staff

260-498B SPECIAL STUDIES. (3 credits).
Staff

260-499A SPECIAL STUDIES. (3 credits).
Staff

Languages

Arabic is taught by the staff of the Institute of Islamic Studies and students taking it must fulfil the requirements of the Institute.

Students taking other introductory language courses in Religious Studies programs are strongly advised to take the advanced course also.

Instruction in the languages of some other religious traditions (such as Ancient Egyptian and Sanskrit) may be available in any given year. Ask the Adviser for further information.

397-110D ELEMENTARY ARABIC. (6 credits).
Staff

397-220D INTERMEDIATE ARABIC. (6credits).
Staff

397-300D ADVANCED ARABIC. (6 credits).
Staff

RELATED COURSES

For the selection of Related Courses, the Faculty Adviser should be consulted. Related Courses are chosen from the Faculty of Education, the Faculty of Music, and the following Departments in the Faculty of Arts:

Anthropology
Art History
Classics
English
French Canada Studies
Political Science
German
History
Italian
Jewish Studies
Philosophy
Sociology

Courses from other Faculties or Departments may also be considered appropriate by the Adviser, depending upon their content, and the student's interests and qualifications.

Students taking Related Courses must fulfill any requirements of the Faculty or Department concerned (permission from the Dean or instructor, prerequisites, grades, etc.).

RUSSIAN AND SLAVIC STUDIES (141)

PROFESSOR — J.G. NICHOLSON *(Chairman)*
Visiting Professors — R.V. PLETNEV
Associate Professor — A. FODOR; P.M. AUSTIN
Assistant Professors — LUDMILA BAUER; IRENE PAVILANIS

Samuel Bronfman Building, Room 660, Telephone: 392-4616.

Many opportunities are open to students with qualifications in Russian and other Slavic studies. Students may be interested in the organization of human society, comparative literature, linguistics. Russian studies are highly relevant to all of these. In addition, because of similar problems in geography, climate, industrial and economic growth Russian studies may have a particular fascination for the Canadian student.

MAJOR PROGRAM

The Major program consists of at least 54 credits (of which at least 42 must be in Russian, preferably twelve credits in U-1, twelve in U-2 and 18 credits in U-3). Various sequences of courses are possible but close consultation with the Department and approval of proposed sequences is essential. Please consult the office at 392-4610 or 392-4616. Admission is based on personal interviews to establish how much Russian has been taken previously, if any, and to work out a reasonable sequence for the individual.

HONOURS PROGRAM

The Department offers a full Honours program in Russian. Single Honours in Russian require at least 10 courses (60 credits) in Russian to be taken during the three university years out of a total of 15 required courses (90 credits). In addition, at least a second class average (B) must be obtained. All Honours programs require consideration and approval by the Department. Normally 200 level courses are taken in U-1, 300 level ones in U-2 and 400 level courses in U-3. However, many exceptions may occur depending on student's abilities. Telephone 392-4610 or 392-4616 for information.

JOINT HONOURS PROGRAMS

The Department also offers Joint Honours programs in cooperation with the Departments of Classics, French, Geography, German, History, Italian, Linguistics, Political Science, Spanish. These programs also require an overall total of 90 credits with a B average over the three university years. Two courses (12 credits) in Russian and two (12 credits) in the cooperating Department are normally taken each year. As in Single Honours and Majors all programs require consideration and approval by the Departments involved. For information telephone 392-4610 or 392-4616.

COURSE DESCRIPTIONS

141-210D RUSSIAN LANGUAGE. (6 credits; *Text:* to be announced). Reading, grammar, translation, oral practice.
Staff

141-212D RUSSIAN READING COURSE. (6 credits). Method and practice of translation. The first half of the course will be devoted to an introduction to Russian, the second half to actual translation of texts from various fields of interest. This course is intended for students wishing to learn to read Russian easily.
Staff

141-215D RUSSIAN LANGUAGE INTENSIVE. (12 credits). Intensive language course, covering the first two levels in one year rather than the usual two. Students may, at the discretion of the Department, revert to Russian 210D after four weeks at the latest. Note that such a transfer has credit implications.
Professor Bauer and Staff

141-217B ACCELERATED INTRODUCTION TO RUSSIAN STUDIES. (3 credits; Prerequisite: Evidence of ability in modern or classical languages and Departmental permission). This course is intended for the student who has already shown ability in modern or classical languages, and who wants to obtain a good knowledge of Russian language, literature and civilization in a short time. Successful completion of this course will normally permit students to take the higher level courses in Russian.
Professor Nicholson and Staff

141-218A SOVIET LITERATURE (UP TO WORLD WAR II). (3 credits; Prerequisite: None). The social conditions leading to the creation of post-revolutionary literature. What does the West understand by "socialist realism" and what does this term mean in Russia? The period of different literary schools in Soviet literature and the organization of the Writers' Union. Specific features of the literature of the thirties. This course will be conducted in English.
Professor Fodor

141-219B SOVIET LITERATURE (AFTER WORLD WAR II). (3 credits; Prerequisite: None). The impact of World War II on Soviet literature. Postwar changes in official literary policy; "Zhdanovism." The period of "thaw," and debates on the principles of creative freedom. The three Nobel prize winners. The emergence of young writers with new voices. This course will be conducted in English.
Professor Fodor

141-220D RUSSIAN LANGUAGE. (6 credits; Prerequisite: Russian 210D0D or equivalent; *Text:* Stilman and Harkins, *Introductory Russian Grammar).* Reading, translation, conversation.
Staff

141-222D RUSSIAN CIVILIZATION IN THE TWENTIETH CENTURY. (6 credits; Prerequisites: Russian 210D or equivalent and permission of the Department). This is a general introduction to the changing relationships between Russian language, literature, thought and culture in the twentieth century. It will be conducted to some extent in Russian.
Staff

141-223A RUSSIAN WRITERS OF THE 19th CENTURY. (3 credits; Prerequisite: None). The course, to be given in English, is designed for students interested in Russian Literature and its authors. The course will offer students a broad overview acquainting them with the main Russian literary currents of the 19th century and with the lives and destinies of its writers.
Professor Pavilanis

141-224B THE RUSSIAN WRITER OF THE TWENTIETH CENTURY. (3 credits; Prerequisite: None). This course, given in English, examines the role of the creative writer in the conditions of Russian society of the twentieth century. Special emphasis is laid on factors affecting the writer's art as well on the writer's own reflections upon his craft.
Staff

141-225D RUSSIAN LANGUAGE. (Continuation of Russian 215D). (6 credits; Prerequisite: Russian 215D or equivalent. Registration limited). Students taking it will acquire a good working knowledge and appreciation of the language and will be able to go directly into advanced courses in Russian language and literature. Students may, at the discretion of the Department, revert to Russian 220D after four weeks at the latest.
Professor Bauer and Staff

141-226D OUTLINES OF 19th CENTURY RUSSIAN LITERATURE. (6 credits; Prerequisites: Russian 215D or equivalent, and the permission of the Department; *Texts:* Mirsky, *History of Russian Literature:* Knopf; Slonim, *Outlines of Russian Literature:* Oxford; Other prescribed texts to be selected). A general introduction to Russian prose, poetry and drama in the 19th Century. Selected texts will be read in the original and discussed. The course will be conducted to some extent in Russian.
Professor Nicholson and Staff

141-227D INTRODUCTION TO SOVIET RUSSIAN LITERATURE. (6 credits; Prerequisites: Russian 215D or equivalent, and the permission of the Department; *Texts:* Reddaway (ed.) *Soviet Short Stories,* Vol. 2, Harper *et al.,* editors, *New Voices;* Other prescribed texts to be selected). Selected texts will be read in the original and discussed. The course will be conducted mainly in Russian.
Staff

141-235D INTRODUCTION TO RUSSIAN STUDIES. (6 credits; Prerequisite: Permission of the Department). An introduction to the study of Russian civilization with emphasis on the Russian language as a vehicle of culture, on the literature of the 19th century, on Soviet literature, on the role of the author in Russian society, on literary censorship in the 19th and 20th centuries.
Professor Nicholson and Staff

141-240D INTRODUCTION TO UKRAINIAN STUDIES. (6 credits; Prerequisite: Permission of the Department). An introduction to the study of Ukrainian civilization with emphasis on the position of Ukrainian as an Eastern Slavic language with an ancient culture, on the literature of the 19th and 20th centuries, and on the role of the Ukrainian writer in his society.
Staff

141-245D INTRODUCTION TO BULGARIAN STUDIES. (6 credits; Prerequisite: Permission of the Department). An introduction to the study of Bulgarian civilization. Emphasis will be laid on Bulgarian as a development of the Slavs' first literary language, on Bulgarian literature from the earliest times and on the role of the Bulgarian writer in his society.
Staff

141-255D INTRODUCTION TO POLISH STUDIES. (6 credits; Prerequisite: Permission of the Department). An introduction to the study of Polish civilization, with emphasis on Polish as a Western Slavic language, on Polish literature of the 19th and 20th centuries particularly, and on the role of the Polish writer in his society.
Staff

141-300D RUSSIAN LANGUAGE AND LITERATURE IN THE 19th CENTURY. (6 credits; Prerequisites: Russian 220D or equivalent and permission of the Department). Grammar. Readings from selected authors, conversation and

composition. The course will be conducted in Russian.
Staff

141-320D RUSSIAN CIVILIZATION IN THE NINETEENTH CENTURY. (6 credits; Prerequisites: Russian 220D, 222D or equivalent and permission of the Department). This course, given in Russian, discusses the relationship between Russian language, literature, thought and culture from Karamzin to Chekhov.
Professor Pavilanis

141-340D INTERMEDIATE UKRAINIAN STUDIES. (6 credits; Prerequisite: 240D or permission of the Department). Second level Ukrainian studies.
Staff

141-342B INTRODUCTION TO HUNGARIAN STUDIES. (3 credits; Prerequisite: Permission of the Department) An introduction to the study of Hungarian civilization with emphasis on Hungary's written language and its development since the 11th century. The Turkish impact; the influence of Germanic and Slavic cultures. Petöfi and the 19th century writers. Russian classics in Hungary. Modern literature. The course will be conducted in English.
Professor Fodor

141-345D INTERMEDIATE POLISH STUDIES. (6 credits; Prerequisite: 255D or permission of the Department).Second level Polish studies.
Staff

141-350D ADVANCED RUSSIAN LANGUAGE AND SYNTAX. (6 credits; Prerequisites: Russian 225D or equvalent, and permission of the Department). Prose composition, translation, essay writing. An introduction to Russian stylistics.
Professor Austin

141-355D RUSSIAN COMPARATIVE GRAMMAR. (6 credits; Prerequisites: Russian 225D or equivalent and permission of the Department). This course, given principally in Russian, will discuss Russian strucurally from the viewpoint of the non-Russian student. Each student will prepare at least one original paper to be discussed in class.
Professor Nicholson

141-360D THE RUSSIAN NOVEL FROM 1820 TO 1860. (6 credits; Prerequisites: Russian 225D or equivalent, and permission of the Department). The development of the Russian novel before Tolstoy, and Dostoevsty. Reading texts will be chosen from the prose works of Pushkin, Lermontov, Gogol', Turgenev and Goncharov. This course will be conducted in Russian.
Professor Austin

141-370D PUSHKIN AND HIS CONTEMPORARIES. (6 credits; Prerequisites: Russian 225D or equivalent and permission of the Department). The Golden Age of Russian poetry. The course will be conducted in Russian.
Staff

141-400D RUSSIAN LANGUAGE AND LITERATURE AFTER 1917. (6 credits; Prerequisite: Russian 300D or permission of the Department). The development of the Russian novel and language after the October Revolution. The course will be conducted in Russian.
Staff

141-410D DRAMA IN RUSSIAN LITERATURE. (6 credits; Prerequisite: Permission of the Department). Representative works of the 19th and 20th centuries are studied and discussed. Reading texts will be chosen from the plays of Fonvizin, Griboedov, Pushkin, Gogol', A. Ostrovsky, Turgenev, Chekhov, Gor'ky and Kataev. The course will be conducted in Russian.
Staff

141-420D RUSSIAN CIVILIZATION OF THE EARLIER PERIOD. (6 credits; Prerequisite: Permission of the Department). This course, given in Russian, discusses the development of Russian culture from the earliest times to the death of Catherine the Great.
Staff

141-450D TWENTIETH CENTURY RUSSIAN LANGUAGE AND LITERATURE. (6 credits; Prerequisites: Russian 350D or equivalent and permission of the Department). Specific features of the style of modern literary Russian will be analysed and compared with the language of the 19th century. The origins and development of Soviet Russian literature will be studied in detail. The course is primarily intended for Honours students. It will be conducted in Russian.
Professor Fodor and Staff

141-460D THE RUSSIAN NOVEL FROM 1860 TO 1900. (6 credits; Prerequisites: Russian 350D or equivalent and permission of the Department). The Golden Age of the novel in Russian literature. The major works of Turgenev, Dostoevsky and Tolstoy will be read in the original and discussed in Russian.
Professor Pavilanis

141-505A LEO TOLSTOY AND HIS TIME (1847 TO 1870). (3 credits; Prerequisite: Russian 300D, 360D or Permission of the Department). The major works of Russia's most important writer up to and including *War and Peace* will be studied. Emphasis will be placed on Tolstoy's impact on the literary and cultural life of his society. The course will be conducted mainly in Russian. It differs from 460D in its exclusive emphasis on Tolstoy.
Professor Fodor

141-506B LEO TOLSTOY AND HIS TIME (1870 TO 1910). (3 credits; Prerequisite: Russian 300D, 360D, 505A or Permission of the Department). Tolstoy's novels *Anna Karenina, Resurrection* and other works will be studied. Emphasis will be placed on the author's impact on the literary and spiritual life of his society. The course will be conducted

mainly in Russian. It differs from the second part of 460D in its exclusive emphasis on Tolstoy.
Professor Fodor

141 GRADUATE COURSES. Certain graduate courses are open to U-2 and U-3 students. Consult the Graduate calendar and the Department.

SCHOOL OF SOCIAL WORK (407)

Professors — MYER KATZ *(Director);* EDWARD V. SHINER; DAVID E. WOODSWORTH
Associates Professors — PATRICK DEEHY; GLENN DROVER; DOROTHY R. FREEMAN; LOTTE MARCUS; FRANK J. McGILLY
Assistant Professors — BEN ZION DALFEN; SYDNEY DUDER; SHEILA GOLDBLOOM; ESTELLE HOPMEYER; JUDITH MAGILL; DIANE REICHERTZ; DOROTHY SIROTA; SHIRLEY STEELE; JAMES TORCZYNER; ELIZABETH URTNOWSKI
Lecturers — CLAIRE ARSENEAU; MARIE BRISEBOIS; CAROLE CHRISTENSEN; INGRID COOPER; MARION GARMAISE; ZELDA HARRIS; FRANCOISE LECLAIRE; JANET MACDONALD; JACOB RABY; TRYNA ROTHOLZ, ERIC SHRAGGE; AMY SHULMAN; CAROL SPEIRS; ANNETTE WERK

Wilson Hall, 3506 University Street, Telephone: 392-5040

BACHELOR OF SOCIAL WORK DEGREE (B.S.W.)

Educational Objectives

The Faculty of Arts, through the McGill University School of Social Work, offers an undergraduate program of professional studies in Social Work, leading to the Degree of Bachelor of Social Work (B.S.W.). The B.S.W. degree course has the following principal educational objectives:
1) To prepare students for professional practice in any one of a range of social service positions. (The B.S.W. degree represents the point of admission into the Corporation of Professional Social Workers of the Province of Quebec and the Canadian Association of Social Workers.)
2) To prepare selected students for entry into more specialized professional studies at the graduate level.

Admission

1. Three-Year Undergraduate B.S.W

Applicants to this program must have completed two years of collegiate or equivalent studies, including introductory courses in sociology, psychology, statistics and French, as recognized by the University Admissions Office. Normally a candidate will not be considered for the program unless his/her GPA is 3.0 or better. Within the group of applicants who meet this requirement, preference will be given to those who have had social work related experience, paid or volunteer, and also to those who demonstrate personal suitability for the profession of social work as determined by the personal statement and the group interview. Students applying at the end of the first year of University should count on at least 2½ years of study to complete the requirements for the B.S.W. degree. At the moment no provision exists for graduates of a 3-year collegial program to obtain the degree with less than 90 credits.

Application for admission should be made to the University Admissions Office.

2. Mature Student Program.

Certain mature students may be admitted into the Faculty of Arts to a 120 credit program of study leading to a B.S.W. degree. Mature students are defined as persons 23 years of age and over who lack the academic requirements for University entrance.

In order to be considered for the B.S.W. program a mature applicant must:

(a) Have had substantial work experience in social work or closely related fields;
(b) Be able to produce a satisfactory recommendation from community social agencies with which he/she has been affiliated.

Candidates for this program should apply to the Director of the University Admissions Office.

3. Special B.S.W.

A limited number of students with Bachelor's degrees are admitted into a Special B.S.W. program in which advanced standing is given for the social science content of the Bachelor's degree.

The minimum requirements for admission to the Special B.S.W. are as follows:

1. Bachelor's degree with a high standing in the final year; or, if graduating in the current year, in the last complete year.
2. Completion of at least 5 full courses in the social and psychological sciences (economics, political science, psychology, sociology and anthropology).
3. A course in statistics is a prerequisite to admission. If a research course has not been taken before admission, the student must take Social Work 407-270 as part of the B.S.W. program.

Normally a candidate will not be considered for the program unless his/her GPA is 3.0 or better. Within the group of applicants who meet this requirement, preference will be given to those who have had social work related experience, paid or volunteer, and also to those who demonstrate personal suitability for the profession of social work as determined by the personal statement and the group interview.

The Special B.S.W. is a full-time program of study and is not open to students on a part-time basis. Those wishing to pursue this program must follow the prescribed pattern of study starting with the initial summer session in May (6 weeks), the academic session (Sept.—April), and the second summer session (April—July of the following year). Students

who have satisfactorily completed the Special B.S.W. program are not guaranteed admission to the Master's program.

Application for admission should be made at the School of Social Work.

Plan of Study

Regular B.S.W.

a) The normal B.S.W. comprises a combination, over the three years, of professional courses, supervised field practice and practice-related courses drawn principally from the social and psychological sciences.

b) The program is organized so that the proportion of professional content to social and psychological science content increases from year I to year III.

c) The B.S.W. degree will be awarded upon successful completion of 90 credits of study of which at least 78 must be related to the students' professional development. Of these 78 credits, 48—60 must be social work courses. Not less than 18 credits must be chosen from the social or psychological sciences. The remaining credits may be taken according to the student's own individual interests. If credits in French language are required, they will be taken from among the credits available after satisfaction of the requirements of social work and social science credits.

d) The distribution of the 48-60 credits of social work content over the three years will be approximately as follows:
Year 1 —12—15 credits
Year II —18—21 credits
Year III — 18—24 credits

e) Students entering their University I year will take Social Work 254D and 255D, plus one or two other 3 credit social work courses. Students who have already taken a statistics course will normally take social work 270 during this year. The remaining 15—18 credits will be taken elsewhere in the University.

f) Students entering B.S.W. II will take social work 352A, 455D and 456D, plus one or two other 3 credit social work courses. The remaining 9—12 credits will be taken elsewhere in the University.

g) Students entering B.S.W. III will take social work 458B and 480D, plus 3—6 other social work courses, including at least two of the following: 472A, 473A, 474A, 475B, 476A,B, 477B, 484B, 497A, 498B, 528A, 529B. The remaining 6—12 credits will be taken elsewhere in the University.

h) Before graduation with the B.S.W. degree it is required that each student satisfactorily complete one half course in introductory statistics and one half course in social science research methods.

Special B.S.W.

The Special B.S.W., for those holding an undergraduate degree, will be offered in three time blocks: a summer session of 6 weeks, May—June, one regular academic year, and a summer session of 12 weeks, April-May-June. Students in this program will take at least 48 credits, including courses in social work practice, field practice, and policy. Required courses are Social Work 353L, 352L, 481A, 482L, 456D, 458A, 480L, and at least two of the following courses: 472A, 473A,B, 474A, 475B, 476A, B, 477B, 484B, 497A, 498B, 528A, 529B. The remaining 12 credits will be selected from other courses offered at the B.S.W. level. Regulation (h) under Regular B.S.W. also applies to students in the Special B.S.W. program. Specific information and application material may be received directly from the School of Social Work in December for 1977-78 admissions.

COURSE DESCRIPTIONS

407-254D INTRODUCTION TO SOCIAL WORK. (6 credits). An examination of major social problems associated with life in large urban areas and the social services, public and private which have been established to deal with such problems. Social work practice theory including models and theories of helping and change techniques. (Not open to students who have taken 407-250A or 251B).
Professors Deehy, Reichertz

407-255D SOCIAL WORK PRACTICUM. (3 credits; Corequisite; 407-254D). An introductory field experience to provide U1 students with the opportunity to observe social work practice, to participate in the work of a social organization, to assume responsibility for a limited practice assignment, and to conduct critical analyses of their field experiences through conference discussions and individual tutorials.
Field Instruction Staff

407-270A,B,L INTRODUCTION TO SOCIAL WORK RESEARCH. (3 credits). This course is intended to help students make effective use of published research reports and agency statistics, and to show them how to conduct simple research projects. It covers problem formulation, research design, data collection, analysis and interpretation, use of the computer terminal, and report writing. Modular format. (Not open to students who have taken 407-470A).
Professor Duder

407-352A,L THE PUBLIC SOCIAL SERVICES IN CANADA. (3 credits). An introduction to the programs of public social services in effect in Canada in the fields of income, housing and health. The course seeks to acquaint students with the characteristics of these programs, and with the policy issues which surround them and to enhance the students' ability to evaluate the functioning of the programs. This is a a modular course. Students submit one written assignment in each of the three fields.
Professor McGilly

407-353L INTRODUCTION TO PRACTICE. (6 credits). Introduction to the principles and practice of social work. Approaches to social problem identification and analysis. The role of the social worker as an agent of change or of social control. Elements of working with individual groups and communities. Laboratory periods will permit the application of course content to practice.
Professors Katz and Dalfen

407-451B CHILDREN'S NEEDS AND SOCIAL SERVICES. (3 credits). The identification and analysis of the needs of children and their families. Consideration of the processes of selected social services, e.g. day care, visiting homemakers, foster family and institutional care adoption, etc., designed to support, supplement and substitute for the family. Special emphasis will be placed on social legislation related to neglected, abused and dependent children.
Ernest Hirshbach

407-452A,L SOCIAL WELFARE ORGANIZATIONS AND DISADVANTAGED CLIENTELE. (3 credits). An examination of the structure of organizations serving the needs of socially disadvantaged persons or groups, and the processes through which such services are provided. Particular attention will be paid to the definition, screening and serving of disadvantaged clients as compared to those drawn from more "privileged" groups in society. Strategies for changing such organizations will be explored.
Professor Deehy

407-453A,B YOUTH AND YOUNG ADULTS: SOCIAL NEEDS AND SERVICES. (3 credits). The physical, psychological and social development of youth and young adults and the relationship of such development to demands of the social environment. Emphasis is on the effects of societal change on family roles, interpersonal relationships, educational and work achievement, youths' community role, social services for youth and young adults.
Professor Dalfen

407-454A SOCIAL SERVICES IN THE HEALTH FIELD. (3 credits). An examination of the relationship between illness and social conditions. Social planning, practice and research aspects of health care and the delivery of health services. An evaluation of current and developing professional roles of social workers in health teams, with particular emphasis on social rehabilitation of the physically and mentally ill.
Professor Marcus

407-455D* SEMINAR ON SOCIAL WORK PRACTICE. (6 credits). This course will focus on principles of social work practice and on developing skill in working with individuals, families, small groups and communities. Attention will be given to the applicability of selected social and psychological science concepts in constructing models of social work intervention. Methods of practice will be analysed from a range of settings, drawing upon student field experiences.

**For special B.S.W. students, the content of this course will be presented in two courses (one in the fall and one in the summer session) under two course numbers — 407-481A (3 credits) and 407-482L (3 credits).*
Staff

407-456D FIELD PRACTICE. (6 credits). Supervised educational experiences in social work practice designed to integrate practice with theoretical knowledge. Through field placements in university affiliated teaching centres, students will work with individuals, families, groups and communities, receiving both individual and group instruction. Two days per week, September to mid April.

407-457B LEGAL PROBLEMS OF THE POOR. (3 credits). A lecture-and-seminar course on law and social welfare, with the emphasis largely on the social-legal problems and rights of the poor, and methods of legal protection and redress available to them. Aspects of Canadian civil law and criminal law will be reviewed. Emphasis will be placed on the Quebec scene, with landlord-tenant, contract and debtor, matrimonial regimes, parental responsibility and social insurance. The total Canadian perspective will be considered in areas of divorce, unemployment insurance, arrest, and bail.
Robert M. Cooper

407-458A,B SOCIAL POLICY AND ADMINISTRATION. (3 credits). An analysis of policy issues which underlie selected social service programs; the administrative structure of such programs, their legislative base, their effectiveness and the role of professionals in the service delivery. Examples will be drawn from the current field experiences of students in the course.
Professors Woodsworth and Drover

407-461B SEMINAR IN CORRECTIONS. (3 credits). An examination of criminal behaviour in Canada and the U.S., and the correctional system designed to deal with such behaviour. The parts played by the Police, Judiciary, Penal System and the Probation and Parole Services will be discussed, together with the role of Social Work in the correctional process.
Professor Deehy

407-462A POVERTY, INEQUALITY AND CAPITALISM. (3 credits). An examination of the notion of social welfare from the perspective of poverty and inequality. Attention is given to socio-economic dynamics of inequality in a capitalist state rather than programs designed to combat poverty. Specific topics include inequality in relation to income distribution and redistribution, wealth, incentives, economic growth, inflation, consumption, rich and poor nations. (Not open to students who have taken 407-460A).
Professor Drover

407-463B SOCIAL WORK PRACTICE WITH THE AGED. (3 credits). A seminar dealing with social

services for the aged. Topics will include: dilemmas of retirement, institutionalizing of the elderly, community care, separation and loss, role of the social worker with the elderly and their families.
Professor Sirota

407-464A INDUSTRIAL SOCIAL WORK. (3 credits). A seminar on social work practice in industrial settings. Analysis of conceptions of work; work-related, personal and family problems, relationships between social agencies and the world of work, social service programs offered under industrial and trade union auspices.
Claire Arseneau

407-465A SEMINAR IN SCHOOL SOCIAL SERVICES. (3 credits). The seminar will examine the interrelationships of the pupil's social environment in the culture of the school, the problems of teachers and principal and their resultant impact on the pupil's academic achievement. Existing models of social work intervention in schools will be discussed with special emphasis given to "Interprofessional Collaboration".
Professor Dalfen

407-467B SOCIAL WORK AND PUBLIC ISSUES. (3 credits). An examination of the process by which social problems are translated into public issues, the factors influencing various interest groups in taking positions on such issues and the reasons why some succeed more than others. Particular attention will be paid to issues raised at the municipal and provincial level which have relevance for social work.
Professor Deehy

407-471B INDIVIDUAL SOCIAL WORK RESEARCH PROJECTS. (3 credits). This course will provide an opportunity for interested students to conduct small-scale practical research projects, either individually or in small groups, with tutorial assistance from staff members and without the formal reporting requirements of the M.S. W. research project.
Professor Shiner and Staff

407-472A SEMINAR ON FAMILY ASSESSMENT. (3 credits). An advanced seminar designed to integrate knowledge of human personality in social process. Emphasis will be upon the appraisal and assessment of patterns of reciprocity among members of disturbed and disorganized families.
Shirley Braverman

407-473A,B CASEWORK WITH INDIVIDUALS AND FAMILIES. (3 credits). Theory and practice of work with individuals and families under stress. Topics will include: categories of hazardous events; affective, behavioural and role disorganization; phases in the crisis cycle; techniques of crisis intervention and abatement.
Professor Katz

407-474A METHODS OF COMMUNITY DEVELOPMENT, SOCIAL ACTION. (3 credits). The aim of this course is to develop an understanding of the organizing process and to enrich the student's repertoire of direct organizing skills. Emphasis is on organizational entities, community power and conflict, organizing strategies and their application, in the context of current issues in urban community development.
Professor Torczyner

407-475B COMMUNITY ORGANIZATION. (3 credits). A continuation of Methods of Community Development, Social Action, with emphasis on the integration of community organization theory and practice. An examination of problems encountered in practice, current issues and trends in the conceptualization of community organization.
Professor Torczyner

407-476A,B SOCIAL WORK PRACTICE WITH GROUPS I. (3 credits). Theory and practice of work with groups. Focus will be on group development theory and the skills of the worker as he strengthens group potential for mutual aid. Children and adult groups in a range of settings will be examined.
Professor Magill

407-477B SOCIAL WORK PRACTICE WITH GROUPS II. (3 credits). An advanced course in practice, with emphasis on comparative theories of groups. *Not given 1976-77.*
Professor Magill

407-480L,D FIELD INSTRUCTION. (6 credits). Supervised educational experience in social work practice, integrating practice with theoretical knowledge characteristic of the selected field. Individual and group instruction.
Field Instructional Staff

407-481A SEMINAR ON SOCIAL WORK PRACTICE I. (3 credits). Principles of Social Work Practice in working with individuals, families, small groups and communities. Methods of practice will be analysed from a range of settings, drawing upon student field experience.
Professor Magill

407-482L SEMINAR ON SOCIAL WORK PRACTICE II. (3 credits). A continuation of 481A.
Professor Reichertz

407-483B SEMINAR ON MINORITY GROUPS AND SOCIAL WELFARE. (3 credits). This seminar is designed to prepare students for working effectively with selected minority clienteles. Content will include: the impact of formal and informal social policies and institutions on the welfare of minorities, and the relationship between cultural patterns of clients and social work practice.
Carole Christensen

407-484B SEMINAR IN COMMUNITY ORGANIZATION. (3 credits). This seminar examines issues and dilemmas which students encounter in community organization practice. The workshops provide a forum to analyse neighbourhood structures, organizations and systems which affect community lives.

Particular attention will be directed toward the development of citizens' groups and coalitions, the analysis of power structures and planning with community associations for change.
Professor Torczyner

407-497A SEMINAR IN INTEGRATION OF PRACTICE METHODS. (3 credits). Discussion seminar in which attention will be given to a range of beginning theoretical attempts to define an integrated method. Emphasis will be placed on the examination of existing practice models; the problems entailed in creating a common model which allows for a differential application, and a study of the central requirements for functional statement of practice. *Not offered 1976-77.*
Staff

407-498B SEMINAR IN INTEGRATION OF PRACTICE METHODS. (3 credits). A continuation of 497A. *Not offered 1976-77.*
Staff

COURSES OPEN TO UNDERGRADUATE AND GRADUATE STUDENTS

407-528A ACTIVITY GROUP METHODS. (3 credits). In this class, play and socializing activities are studied: (a) for their value as enjoyable and strength-building experiences; (b) dynamically as they apply theoretically and practically to work with various types, sizes and styles of client groups; (c) as a means of developing professional skills relevant to facilitating personal and interpersonal growth in working with groups; (d) as a means of helping the student develop an awareness of his/her own effectiveness as a participating group member or leader. (Not open to students who have taken 407-478 or 628).
Lanie Melamed

407-529B PSYCHODRAMA. (3 credits). Study of the rationale and techniques of psychodrama application in role playing situations for individuals and groups; increase in sensitivity to clients. Didactic lectures with application in simulated situations. (Not open to students who have taken 407-629B).
Dr. Surkis

SCIENCE FOR ARTS STUDENTS

Course descriptions appear in the appropriate departmental listing in the Faculty of Science section of this Announcement.

PHYSICS 198-200D IDEAS AND CONCEPTS OF MODERN PHYSICS. (6 credits).

PHYSICS 198-224B PHYSICS OF MUSIC. (3 credits).

SOCIOLOGY (166)

Professors — DAVID N. SOLOMON *(Chairman);* WILLIAM A. WESTLEY; RICHARD F. HAMILTON; MAURICE PINARD
Associate Professors — MICHAEL P. CARROLL; ROGER G. KROHN; GERTRUDE J. ROBINSON; DONALD VON ESCHEN
Assistant Professors — WILLIAM EATON; JOSEPH LELIA; HENRY LESIEUR *(Visiting);* ULI LOCHER; PRUDENCE RAINS *(on leave 1976-77);* MICHAEL SMITH; MALCOLM SPECTOR

Stephen Leacock Building, General Information: Room 709, Telephone: 392-5178.

MAJOR PROGRAM IN SOCIOLOGY

The Major program in Sociology is intended for students who do not wish to confine their studies to the sequence of courses required of Honours students. Admission to the Major program will normally take place after a student has completed an introductory course in Sociology. A minimum grade of 65% in Introductory Sociology is required for acceptance into the Major program.

Required course work is as follows:

Introduction to Sociology
33 additional credits in Sociology
24 credits chosen from one or two of:

Anthropology
Economics
Geography
History
Political Science
Psychology

Students wishing to be admitted to the Program should consult with the Chairman of the Undergraduate Committee.

THE HONOURS PROGRAM

The Honours program is designed for students who are interested in pursuing graduate study in Sociology.

Admission

Entrance into the Honours program will take place at the beginning of the U2 year. Normally, only students with a CGPA of 3.0 or better during their U1 year will be admitted into the program. Students should make their application for admission sometime during the Summer preceding their second year.

Requirements

In addition to Introductory Sociology, Honours students are expected to take at least 60 credits in Sociology. With the approval of the Honours Advisor, up to 15 of these 60 credits may be taken in fields related to Sociology (provided that the courses taken in these fields are numbered 300 or above). Honours students must take Sociology 350

(Statistics), Sociology 361 (Introduction to Quantitative Analysis) and Sociology 351 (History of Sociological Theory), as well as two graduate seminars or one graduate collegium.

In order to be allowed to remain in the program and to receive the Honours degree students must maintain a CGPA of 3.0, as well as GPA of 3.0 in Sociology courses. In addition, no course with a grade below C will be credited towards the 60 credits required for the Honours degree. In the case of courses specified by the program (Statistics, Methods, History of Theory, etc.) a student receiving a grade below C may, with the permission of the Department, take a supplemental examination or repeat the course. In the case of a course being counted as one of the credits required by the program a student receiving a grade below C has the additional option of substituting a new course in Sociology providing that his total grade point average in Sociology remains above 3.0.

First Class Honours in Sociology will be granted based on CGPA of 3.5 or above as well as GPA of 3.5 or above in Sociology courses.

JOINT HONOURS PROGRAMS

Joint Honours Programs exist with Anthropology, Economics and Political Science. A student taking such Joint Honours Programs must take at least 30 credits in Sociology. These courses must include the 3 required honours courses plus one of the 3 options relating to graduate seminars or collegia.

Students wishing to be admitted to the Honours Program should consult with the Chairman of the Undergraduate Committee.

COURSE DESCRIPTIONS

INTRODUCTION TO SOCIOLOGY IS A PREREQUISITE FOR ALL COURSES IN SOCIOLOGY

INTRODUCTION TO SOCIOLOGY. The three introductory courses, 210A, 212A, and 214B are somewhat different in their emphases (see the descriptions below) but completion of any of these courses will enable the student to take advanced courses in the Department.

166-210A INTRODUCTION TO SOCIOLOGY. (3 credits). A general introduction to sociological theory and the analysis of groups in modern society. The course covers comparative cultures, the social development of the individual, ethnic and class groupings, characteristics of urban life, social change, and institutional structures.
Professor Hamilton

166-212A INTRODUCTION TO SOCIOLOGY. (3 credits). The course offers a general survey of several selected traditions with sociology. Specifically, we shall focus on person-centred traditions (e.g. those centering on Weber and Durkeim), conceptual traditions (e.g. structural-functionalism, exchange, balance) and subject-centred traditions (e.g. family, stratification, etc.)
Professor Carroll

166-214B INTRODUCTION TO SOCIOLOGY: CANADIAN SOCIAL STRUCTURE. (3 credits). An introduction to basic sociological concepts and methods via a survey of the evolution of Canadian social structure from Confederation until the present. Emphasis upon the role of multinational corporations, Canadian-U.S. relations, inequalities in wealth and power, regional conflicts, and the ecology of Canadian society.
Professor

Other Courses

166-217A MASS COMMUNICATIONS. (3 credits). Comparative and historical approach to the rise of the media and their impact on modern Canadian and U.S. society. The interrelationships between economic and media structures and their effect on message content. Enriched with modules.
Professor Robinson

166-220B COMPARATIVE SOCIOLOGY. (3 credits). Comparison of the interrelations of political, economic and cultural institutions in 8 national societies, as they have changed during the 20th century: the United Kingdom, the USSR, China, Brazil, India, Nigeria, the USA, and Canada. Changing relationship of each national society to world-system. Course offered in alternate years only. Modular course.
Professor

166-221B CLASS AND POLITICS IN THE UNITED STATES. (3 credits). Analysis of the class structure of the contemporary United States. Political attitudes and behaviour of elites, upper and lower middle classes, and the working class will be explored. The sources of stability and change will also be considered.
Professor Hamilton

166-222A URBAN SOCIOLOGY. (3 credits). Analysis of the "urban problem", of the major theoretical viewpoints (or the lack thereof) and their political-ideological origins. Specific studies of urban neighbourhoods, the social economy of housing, and urban political structures, will be related to the "problems". Major programs, public housing, urban renewal, and community action will be evaluated.
Professor Krohn

166-223B SOCIAL STRATIFICATION. (3 credits). The theory of caste and class divisions in modern society; the structure of class groups in the United States and Canada; the criteria of rank and the symbols associated with rank; the relationship between occupation, education and class position; problems of upward and downward mobility.
Professor Locher

166-225B MEDICINE & HEALTH IN MODERN SOCIETY. (3 credits). Introduction to a series of socio-medical problems and ways in which sociologically oriented analysis and research are being

used to understand and deal with them. Emphasizing Canada and Quebec, problems such as the following will be included: Poverty and Health; Mental Illness; Aging; Death and Dying; Professionalism; Health Service Organization.
Professor Lella

166-226B ECOLOGY AND SOCIETY. (3 credits). The social origins of the ecological crisis in industrial societies. Comparison of attempts to protect and regulate the environment in industrialized nations. Sociological basis of ecology-oriented social movements and pressure groups. Intensive studies of selected industries and their effects upon the environment.
Professor

166-227A DEVIANCE AND SOCIAL CONTROL. (3 credits). Theories of deviance, the relationship between social change in modern society and the development of social problems; crime in modern society; the relationships between social power, the law and crime, the slum community; the police and crime.
Professor Lesieur

166-230B CLASS, ETHNICITY, AND POLITICS IN CANADA AND IN QUEBEC. (3 credits). Class and Ethnicity in Quebec and Canada. The segmented nature of the social structure. Types of party systems. Class and ethnic factors in federal politics. Various manifestations of class and ethnic politics in Quebec since the thirties: Elite versus mass behaviour. The Quiet Revolution, Separatism and Quebec politics since the sixties.
Professor Pinard

166-235A TECHNOLOGY AND SOCIETY. (3 credits). An examination of the extent to which technological developments impose constraints on ways of arranging social relationships in bureaucratic organizations and in the wider society: the compatibility of current social structures with the effective utilization of technology.
Professor Smith

166-247B FAMILY AND KINSHIP. (3 credits). The course will first consider those family-related institutions which have been proposed as cultural universals. This will lead to a discussion of the nuclear family and some proposed alternatives, the incest taboo, the division of labor by sex and patriarchy. We will then consider selected familial processes, including here interpersonal relations between family members, mate selection, romantic love and the regulation of sexuality.
Professor Carroll

166-250B SOCIAL PROBLEMS. (3 credits). This course will investigate how social problems are defined and how they are controlled. Emphasis will be given to contrasting images of social problems in sociology (from absolutist to relativistic definitions) as well as how problems have been approached by sociologists (including social pathologists, "Chicago school", functionalism, conflict theory, and more recently labelling and critical theory).
Professor Spector

166-303A CONTEMPORARY SOCIAL PSYCHOLOGY. (3 credits). *Not given in 1976-77.* This course will discuss recent developments in social psychology. Selected topics will include the social psychology of religion, socialization, cognitive consistency, small groups and the sociological research process itself. The nature of the prevailing conceptual frameworks in social psychology will also be reviewed.
Professor Carroll

166-305B SOCIALIZATION. (3 credits). The course will concern itself with the effects of early childhood experiences upon adult personality, as well as the more general processes whereby social roles and values are transmitted to the new members of a society. Specific topics will include social reinforcement theories, modeling theories, maternal deprivation, culture and personality studies, cognitive development and infantile sexuality. Special attention will be devoted to the processes of sex-role socialization.
Professor Carroll

166-307A SOCIAL MOVEMENTS AND COLLECTIVE BEHAVIOUR. (3 credits). General theoretical perspectives on collective behaviour. Theories of social movements and revolutions. Examination of a theory of communal (ethnic, religious, etc.) conflict and accommodation and its relevance for the analysis of Quebec's separatist movement. Analysis of other social movements and of elementary forms of collective behaviour (panics, crazes, hostile outbursts.) (Not open to students who have taken 166-407A).
Professor Pinard

166-309A SOCIOLOGY OF HEALTH AND ILLNESS. (3 credits). A survey of sociological studies of persons who are ill, the occupations providing medical care, and the social organization of medical services. Each student carries out and writes a report on a modest field research project, based on interviewing, participant observation, or some other direct contact with people in medical settings.
Professor Solomon

166-310A SOCIOLOGY OF MENTAL DISORDER. (3 credits). This course will integrate data and theories on mental disorders into a sociological framework. Studies from the areas of transcultural psychiatry, psychiatric epidemiology, stress, labelling, mental health care delivery, the family, positive mental health and the "sick" society will be reviewed and analyzed in the framework of sociological theories of stratification, organization and social psychology.
Professor Eaton

166-312B INDUSTRIAL SOCIOLOGY. (3 credits). This course will focus on the responses of both workers and managers to changes in the organization and character of industrial work, taking into

account the larger social and economic contexts within which those responses take place.
Professor Smith

166-315A SOCIOLOGY OF RELIGION. (3 credits). The social determinants and consequences of religious beliefs and practices. Phenomenology of religion: prophets, priests and magicians. Folk religion and major world religions. Classical theories of the societal functions of religion including those of Marx, Weber and Durkheim. Religion in modern societies: secularization; religion and social class; functional alternatives to religion.
Professor Locher

166-317B RESEARCH IN CANADIAN MASS COMMUNICATIONS. (3 credits). An advanced course in mass communications which gives students an opportunity to generate and participate in group research projects analysing the organization, functioning and content of Canadian media. Differences in French-English perspectives, the role of journalists, the portrayal of women in the media are possible research topics.
Professor Robinson

166-324B URBAN SOCIAL ECONOMY. (3 credits). *Not given in 1976-77.* Develops a cross-cultural framework for the study of the urban social economy based on the literature of economic anthropology. This framework will be used for the analysis of social and economic processes in contemporary urban contexts. Students will conduct a small empirical study, in Montreal or elsewhere to test this model.
Professor Krohn

166-325B SOCIOLOGY OF SCIENCE. (3 credits). Comparative studies of sociology and history of the natural and social sciences. A survey of new literature on the internal patterns of scientific (formal and informal) communication and professional organization, and of the scientific and political responses to the newly (since World War II) central place of science in national societies, including the current status of science policy issues in Canada, the U.S., and Britain.
Professor Krohn

166-326A POLITICAL SOCIOLOGY. (3 credits). An examination of the social changes that underly the emergence of modern politics. An outline and empirical critique of the principal alternative models of political functioning in industrial societies.
Professor Smith

166-332D SOCIAL ASPECTS OF DEVELOPMENT IN THE THIRD WORLD. (6 credits). Demographic, cultural, psychological, and structural obstacles to economic growth. Strategies of development, from community organization to revolution, and a comparison of their effectiveness. The transformation of social structure under the impact of industrialization, urbanization and "Westernization".
Professor Von Eschen

166-337B APPLIED SOCIOLOGY. (3 credits). Studies of planned social change in factories, schools, hospitals and communities. The use of sociological research techniques and theory in the evaluation of social innovations. Changes in organizations, government and private social interventions.
Professor Westley

166-340A, 166-341B CURRENT PROBLEMS IN SOCIOLOGY. (3 credits each; Prerequisite: Introduction to Sociology and permission of instructor). This course is intended for students who are adequately prepared to undertake advanced work and have an explicit proposal to submit. A student taking majors may take no more than 6 credits throughout the three year program from the following: 166-340A/341B, 166-342A/343B, 166-440A/166-441B, 166-442A/166-443B. Open to U2 and U3 students only. An honours student may take 12 credits but not more than three credits per term during the last two years. A student wishing to take a greater number than those specified above must petition the Undergraduate Committee for permission. It is the student's responsibility to obtain the instructor's written consent and to inform the Department prior to registration, Room 710.
Staff

166-342A, 166-343B INDEPENDENT READING AND RESEARCH. (3 credits each). See description above for 166-340A, 166-341B.
Staff

166-350A ELEMENTARY STATISTICS IN SOCIOLOGY AND ANTHROPOLOGY. (3 credits; Open to students who have not taken Psychology 204A,B, 205B, 206B or Economics 317D). The basic concepts and techniques of statistical analysis applied in sociological and anthropological research problems. Topics include: frequency distributions, measures of central tendency and variation, simple correlation methods, sampling, tests of significance and non-parametric statistics.
Professor Spector

166-353A SOCIAL CONFLICT. (3 credits). The dynamics of conflict in society. Processes in the initiation and development of conflicts. Types of conflicts. In-group conflicts and conflicts with outgroups. The impact on existing structures. Limiting factors in conflict situations. The role of the agencies of social control.
Professor Von Eschen

166-354D SOCIAL CHANGE. (6 credits). The process of social change in the modern world. National development within a world-system. The first semester will deal with the creation of a European world-economy, 1450-1815: commerce, capitalist agriculture, and statism. The second semester will deal with the capitalist world-system, 1815 to the present: industrialism, nationalism and revolution.
Professor

166-360A NATIONAL LIBERATION MOVEMENTS IN AFRICA. (3 credits). Historical background to national liberation struggles in southern Africa. Social roots and political strategies of African movements and white settler government. Southern Africa's role in world-system. Links of liberation movements to world struggle.
Professor

166-361B INTRODUCTION TO QUANTITATIVE ANALYSIS. (3 credits; Prerequisite: 350A Elementary Statistics in Sociology and Anthropology). The course will offer the beginning student an introduction to the application of the scientific method to social phenomena, with examples drawn from the history of sociology. The course will centre around four non-quantitative research exercises, involving the construction and execution of a survey, content analysis, participant observation, and, small group experimentation.
Professor

166-405A SOCIAL CHANGE IN THE CARIBBEAN. (3 credits). Similarities and differences in the development of Caribbean societies. The heritage of plantation economies. The social and economic implications of contrasting political systems. Religion and folklore in modernizing societies. Students are expected to write research papers on selected aspects of Caribbean development.
Professor Locher

166-410A SERVICE ORGANIZATIONS. (3 credits). Existing theories are examined through the study of organizations which have professionals as central participants, such as medical and health organizations. Career strategies of professional and other personnel are related to organizational structure and process.
Professor Solomon

166-411A STATE AND ECONOMY IN INDUSTRIAL SOCIETIES. (3 credits). Relations between corporations and the national state in North America, Western Europe, and Japan. Industrialization and the Soviet State. Comparative military organization in major industrial societies. Emergence of multinational corporations and transnational organizations such as the International Monetary Fund and the Organization of Petroleum Exporting countries.
Professor

166-415B SOCIAL STRUCTURE AND POLITICS OF GERMANY. (3 credits). Analysis of social institutions of the Federal Republic of Germany. Topics to be considered include stratification, political parties, educational and religious institutions. Social movements and institutional change will also be considered.
Professor Hamilton

166-417B THE SOCIOLOGY OF THE PROFESSIONS. (3 credits). The development of specialized occupations such as medicine, nursing, teaching, law, science, engineering, and the military; occupations in non-Western societies; occupational organization and social control; types and stages of careers; self-involvement and personal identity in the professions.
Professor Solomon

166-420D THE STUDY OF ORGANIZATIONS. (6 credits). An introduction to the major theories, studies, research methods, and change techniques in the sociology of complex organizations. Its aim is to provide the student with a broad knowledge of the literature, an understanding of the major theories and techniques of research, and also to provide training in the techniques of planned organizational change.
Professor Westley

166-435B THE SOCIOLOGY OF POPULAR CULTURE. (3 credits); Prerequisite: Sociology 217A or permission of instructor). A seminar exploring the nature of popular culture, tracing historical beginnings and contemporary changes in film, TV, comics, magazines, and rock music content. Primary emphasis is placed on developing theoretical perspectives and methodologies for analysing genres and themes, and for making distinctions between so-called folk and popular art.
Professor Robinson

166-440A, 166-441B CURRENT PROBLEMS IN SOCIOLOGY. (3 credits each). See description for 166-340A, 166-341B.
Staff

166-442A, 166-443B INDEPENDENT READING AND RESEARCH. (3 credits each). See description for 166-340A, 166-341B.
Staff

166-448B ETHNOMETHODOLOGY. (3 credits). *Not given in 1976-77.*The course will be directed to understanding and coming to terms with this new theoretical development in sociology which considers the methods and practices used by persons to interpret, construct and make sense of their world — to generate social reality.
Professor Rains

166-451A THE HISTORY OF SOCIOLOGICAL THEORY. (3 credits). Social and political debates of the 19th and 20th Centuries seen in their social contexts as the background of current theoretic concerns and developments. Emphasis falls on Smith, St. Simon, Marx, Durkheim, Weber, American functionalists, and the "Chicago School", and the social and theoretic traditions they originated and represent.
Professor Krohn

166-453B COMPARATIVE ETHNIC RELATIONS. (3 credits). A theoretical examination of ethnic and, more generally, communal relations in multicultural societies. Review of the components of such societies (i.e. segmented structure, communal inequalities, dual loyalties.) Their impact and that of social

change on communal conflict. Conflict regulation.Countries to be considered include Canada, Belguim, the Netherlands, Switzerland, Austria, and Northern Ireland.
Professor Pinard

166-463A FIELD METHODS IN SOCIOLOGY. (3 credits.) Participant observation; interviewing and the nature of questions and questioning; the relative advantages and disadvantages of these as methods of generating data and theory; ethical questions.
Professor Spector

166-465B SURVEY ANALYSIS. (3 credits; *Prerequisite:* 361 Introduction to Quantitative Analysis.) The course involves the analysis of completed surveys. Students will be expected to write an original research paper based on survey materials.
Professor Lesieur

166-502B EVIDENCE AND INFERENCE IN SOCIO HISTORICAL COMPARISONS. (3 credits). Creation, manipulation, and interpretation of quantitative data about large-scale systems analysed over historical time. Use of primary and secondary sources of aggregate national and international statistics. Use of data archives. Systematization of use of narrative sources.
Professor

166-503A THEORETICAL PARADIGMS IN SOCIOLOGY. (3 credits; Permission of instructor required). The course will deal with some of the major paradigms used in sociology, including the evolutionary perspectives of the last century (Spencer, Morgan, Engels) and its modern variants, functionalism (both the Durkheim — Kingsley — Davis — Merton and the Durkheim — Mauss — Levi-Strauss traditions) and Freudianism, and then upon more limited paridigm traditions, including Durkheim on suicide and on religion, and Weber on bureaucracy and the rise of capitalism.
Professor Carroll

166-504B QUANTITATIVE METHODS OF SOCIAL RESEARCH. (3 credits; Prerequisite: 350A Elementary Statistics in Sociology and Anthropology). The core area of multivariate analysis will be covered in an introductory manner, including the following contingency tables, distribution theory, analysis of variance, multiple regression, and path modeling. There will be several projects involving use of the University computer.
Professor Eaton

166-552B CURRENT SOCIOLOGICAL THEORY. (3 credits; Prerequisite: 166-451A). Examination of some major areas of current sociological work within a sociology of knowledge and science framework, focusing on apparent "growth edges" in the discipline; and an attempt to relate this current work to its background theoretic traditions, to illustrate it by present work in this Department; and to relate it to the students' own work.
Professor Krohn

Graduate Seminars

NOTE: The following graduate seminars are open to final year Honours students with adequate prpparation.

166-615B SEMINAR: THE SOCIOLOGY OF MEDICINE
Professor Solomon

* **166-618A SEMINAR: THE SOCIOLOGY OF WORK.**
Professor Westley

* **166-620A SEMINAR: SOCIAL MOVEMENTS.**
Professor Von Eschen

166-622A SEMINAR: PROBLEMS IN MASS COMMUNICATIONS.
Professor Robinson

166-625B SEMINAR: INDUSTRIAL SOCIOLOGY: THE ORGANIZATION OF PRODUCTION
Professor Smith

166-627A SEMINAR: POLITICAL SOCIOLOGY.
Professor Hamilton

166-640A SEMINAR: QUALITATIVE METHODS OF SOCIAL RESEARCH
Professor Westley

* **166-661B SEMINAR: SOCIOLOGY OF KNOWLEDGE.**
Professor Krohn

166-670B SEMINAR: COMPARATIVE URBANIZATION IN THE THIRD WORLD
Professor Locher

166-671B SEMINAR: DEVIANCE & SOCIAL CONTROL.
Professor

* **166-672B SEMINAR: SOCIAL CHANGE.**
Professor

* **166-680D SEMINAR: APPLIED SOCIOLOGY & ALTERNATIVE ORGANIZATIONS.**
Professors Smith & Westley

166-681D SEMINAR: COLLEGIUM ON SOCIAL MOVEMENTS.
Professors Pinard & Von Eschen

* **166-682B SEMINAR: ECONOMIC SOCIOLOGY.**
Professor Krohn

* **166-683D SEMINAR: WORLD SYSTEM.**
Professors

* **166-684D SEMINAR: DEVIANCE & THE LABELING PERSPECTIVE.**
Professors Rains & Spector

166-720A,B READING IN SOCIAL THEORY.
Staff

166-730A,B READING AND RESEARCH.
Staff

109-710D SEMINAR: THEORIES OF COMMUNICATION. (See English Department for description.)
Professors Crowley and Theall

110-671A SEMINAR: DESIGNING EFFECTIVE COMMUNICATION. (See English Department for description.)
Professor Hillgartner

** Not given in 1976-77*

URDU-HINDI (397)

397-110D INTRODUCTION TO URDU-HINDI. (6 credits; 5 hours, 1 lab.) Pronunciation, basic grammar and vocabulary, oral drills, both the Urdu (Arabic-Persian) and the Hindi (Deva-Nagari) alphabets, simple readings. This course is designed to allow the student to continue on to Elementary Urdu or to Elementary Hindi.

397-210D ELEMENTATRY URDU. (6 credits; 4 hours, 1 lab.) Further grammar and drills, prose, and poetry readings, composition. taxonomy, mechanisms of pathogenicity, modes of transmission and control.

3 FACULTY OF SCIENCE

ADMINISTRATIVE OFFICERS

UNIVERSITY

ROBERT E. BELL, C.C., B.A., M.A. (U.B.C.), Ph.D. (McG.), D.Sc. (U.N.B., Laval), LL.D. (Tor.), F.R.S., F.R.S.C. **Principal and Vice-Chancellor**

EIGIL PEDERSEN, B.A. (Sir G. Wms.), M.A. (McG.), Ed.D. (Harv.) **Vice-Principal (Academic)**

LEO YAFFE, B.Sc., M.Sc. (Man.), Ph.D. (McG.), F.C.I.C., F.A.P.S., F.R.S.C. **Vice-Principal (Administration)**

ALLAN C. McCOLL, D.F.C., B.Com. (McG.), C.A. **Vice-Principal (Finance)**

WALTER F. HITSCHEFELD, B.A. Sc. (Tor.), Ph.D. (McG.), F.R. Met. S. **Vice-Principal (Research)**

COLIN M. McDOUGALL, D.S.O., B.A. (McG.), **Secretary-General**

JEAN-PAUL SCHULLER, B.A. (Ott.) **Registrar**

PEGGY SHEPPARD, B.Ed. (McG.), B.A. (Sir G. Wms.) **Director, Admission Office**

FACULTY

EDWARD J. STANSBURY, M.A., Ph.D. (Tor.) **Dean of the Faculty of Science**

MICHAEL HERSCHORN, B.A., M.A., Ph.D. (McG.) **Associate Dean of the Faculty of Science**

KYRA EMO, B.Sc. (McG.) **Coordinator Academic Affairs**

LOUISE W. SMITH, B.A. (Carleton, Minn.), M.A. (Harv.) **Recorder**

ANGELINE LUCAS **Senior Adviser**

LILA WILLIS **Senior Adviser**

PROGRAM INFORMATION

The Faculty of Science offers the Bachelor of Science degree (B.Sc.).

The Faculty of Science and the Faculty of Arts offer similar patterns of study towards their degrees. A student may choose among the Faculty programs, Major programs or Honours programs as described in the introductory section of this Announcement common to both Faculties. (See page 10.

DEPARTMENTAL ADVISORY OFFICES

Anatomy, Strathcona Anatomy and Dentistry Building, Rm. 148
Biochemistry, McIntyre Medical Sciences Building, Rm. 802
Biology, Stewart Biology Building, Rm. W3/19
Chemistry, Otto Maass Chemistry Building, Rm. 125A
Computer Science, Burnside Hall, Rm. 229
Crystallography, Frank Dawson Adams Building, Rm. 337
Geography, Burnside Hall, Rm. 513
Geological Sciences, Frank Dawson Adams Building, Rm. 238
Mathematics, Burnside Hall, Rm. 1005
Meteorology, Burnside Hall, Rm. 720
Microbiology and Immunology, 3775 University Street, Rm. 515
Physics, Macdonald Physics Building, Rm. 105
Physiology, McIntyre Medical Sciences Building, Rm. 1137
Psychology, Stewart Biology Building, Rm. N7/28

FACULTY PROGRAMS

NOTE: A description of the Biological Sciences Core Curriculum may be found on page 136.

Anatomical Sciences

The courses of the Biological Sciences Core Curriculum as listed in the Department of Anatomy, page 136 (27 Credits); Chemistry 180-212A, B; 180-222A, B; Anatomy 504-261A (Histology); 504-311A (Musculo-Skeletal); 504-312B (Visceral); 504-321A (Neuroanatomy); (21 credits); plus 12 credits from upper year Biology, Biochemistry, Physiology, and Microbiology and Immunology courses.

60 credits: consult the Department of Anatomy to obtain an Adviser.

Biochemistry

U1: (30-31 credits) Biology 117-201D; Chemistry 180-222A, B, 180-204A or 180-213A, 180-214B or 180-223B; one of the following: Physiology 552-211D, Biology 177-205D, Chemistry 180-281A, B and 180-253B; Mathematics 189-231A, B, and 6 additional credits of electives chosen in consultation with the Adviser.

NOTE: Students in the Faculty program who wish to keep the option of a transfer to Biology open should take Biology 177-205D and 206D in U1.

U2: (30 credits) Biology 177-301A, 177-302B; Biochemistry 507-302D, one of the following: Biology 177-373A, Mathematics 189-232A,B, Psychology 204-204A,B; Biology 177-303A or Chemistry 180-302A,B, and 12 additional credits of electives chosen in consultation with the Adviser.

U3: (30 credits) 12 credits are required from the following lists of courses; 3 of these credits must be taken from List A.

List A: Biochemistry 507-404B, 507-450A, 507-454A, 507-456B.

List B: Anatomy 504-261A; Biology 177-205D, 177-303A, 177-310B, 177-311B, 177-314A; Chemistry 180-207A, 180-217A,B, 180-253B, 180-273A, 180-302A,B, 180-313A, 180-352B, 180-362A,B, 180-372B, 180-411A, Microbiology 528-311A, Physiology 552-211D.

An additional 18 credits from elective courses must be chosen in consultation with the Adviser.

54-55 credits: consult the Department of Biochemistry to obtain an Adviser.

Biogeography

Biology 177-205D*, 177-305A, 177-328B, 177-427A, 177-429B; Geography 183-214A or 183-300B, 183-201B*, 183-271A*, 183-272B*, 183-203D, 183-302D, 183-305A, 183-324B, 183-351B, 183-451D.

*Courses that should be taken in U1.

57 credits: consult the Department of Geography to obtain an Adviser.

Biology

Biology 177-201D, 177-205D, 177-202B (or -274A); Chemistry 180-212A,B; 27 credits Biology courses; 12 credits science courses.

57 credits: consult the Department of Biology to obtain an Adviser.

Chemistry, Bioanalytical or Geoanalytical

Common Chemistry Courses: Chemistry 180-207A, 213A, B†, 217A,B, 222A,B, 223A, B†, 227B, 237B, 313A or 323B, 363A,B, 393A,B or 247A or 267B, 387D, 457B. Chemistry 180-212A,B, must be added if this course has not been taken previously.

To complete Bioanalytical Chemistry; The Core Curriculum in Biological Sciences, page 147.

To complete Geoanalytical Chemistry: Mathematics 189-245A,B, 323A,B, 324A,B; Physics 198-339B; Computer Science 308-200A,B; Geology 186-210A, 211A, 501B. One additional Geology Course.

†Chemistry 180-204A, 214B may be taken by Biology students in lieu of Chemistry 180-213A,B, 223A,B.

55—58 credits: consult the Department of Chemistry to obtain an Adviser.

Chemistry and Biological Sciences

Chemistry 180-222A, B, 204A†, 214B†, 207A, or 227B, 247A or 267B, 302A,B, 352B, 362A,B; Biology 177-201D, 205D, 301A,B; Physics 198-339B; Computer Science 308-200A,B. Students lacking Chemistry 180-212A,B may take this program in they include this course in addition to those listed.

†Chemistry 180-213A,B and 233A may be substituted for 180-204A and 214B.

52-56 credits: consult the Department of Chemistry to obtain an Adviser.

Chemistry, Inorganic/Analytical

Chemistry 180-212A,B, 222A,B, 213A,B, 223A,B, 201A, 227B, 247A, 267B, 301B, 307B, 313A or 323, 411A; Geology 186-210A, 211A, 213B; Mathematics 189-222A,B, 315A,B; Physics 198-232B; plus 6 approved credits.

59 credits: consult the Department of Chemistry to obtain an Adviser.

Chemistry Radioanalytical

Chemistry 180-201A, 207A, 212A,B, 213A,B, 222A,B, 223A,B, 227B, 301B, 313A or 323B, 217A,B, 247B, 363A,B, 393A,B, or 247A or 267B, 387D, 411A, 457B; Mathematics 189-245A,B, 323A,B, 324A,B,; Physics 198-339B, 337B; Computer Science 308-200A,B.

62 credits: consult the Department of Chemistry to obtain an Adviser.

Climatology

Computer Science 308-200A,B; Geography 183-203D*, -321A, -324B, -322A, -327B, -422A, -éâàB; Mathematics 189-222A,B*, -323A,B, -ââéA,B; Meteorology 195-210D*, -320A, -321B; Physics 198-233A.

*Courses that should be taken in U1.

56 credits: consult the Department of Geography to obtain an Adviser.

Dynamics of the Oceans and Atmosphere

Mathematics 189-222A,B, 189-223A, 189-314A,B, 189-315A,B, 189-319B, 189-316B, 189-317A, 189-555D; Meteorology 195-210D, 195-410A, 195-411B, 195-652D; Physics 198-231A, 198-233A, 198-309A, 198-319B.

55 credits: consult the Department of Meteorology to obtain an Adviser.

Earth Physics — A

Computer Science 308-200A,B; Geology 186-303D, 186-220B, Mining and Applied Geophysics 308-230B, six further credits in approved course in Geology; Mathematics 189-222A,B, 1189-233A, 189-314A,B, 189-315A,B, 189-319B; Physics 198-231A,B, 198-232A,B, 198-233A, 198-339B, 198-432A, 198-434B.

58 credits: consult the Department of Physics to obtain an Adviser.

Earth Physics — B

Computer Science 308-200A,B; GEOGRAPHY 183-271A, 183-272B; Geology 186-220B; Mathematics 189-222A,B, 189-314A,B, 189-323A,B; Meteorology 195-210D, 195-320A, 195-321B, 195-420D, 195-653D; Physics 198-232B, 198-233A, 198-309A, 198-334B.

56 credits: consult the Department of Meteorology to obtain an Adviser.

Geomorphology

Geography 183-271A*, -272B,* or Geology 186-242A, -431B; Geography 183-321A or Geology 186-233B; Geography 183-325A, -453B; Geography 183-308B or Geology 186-535D; Geography 183-201B, 202A, 305A, 322A, 323B or 327B, 423B, 321A; Geology 186-210B*, -243B, -310D, -446A, -449B.

*Courses that should be taken in U1.

54 credits: consult the Department of Geography or the Department of Geological Sciences for an Adviser.

Hydrology

Computer Science 308-200A,B; Engineering 303-107A,B; Geography 183-271A, -272B, -305A, -201A,B or -308, -321A, -322A, -327B, -423B; Geology 186-243B, -449B; Mathematics 189-222A,B*; -314A,B*, -315A,B*, -323A,B, -324A,B; Physics 198-231A,BP, or -233A,

*Courses that should be taken in U1.

55 credits: consult the Department of Geography to obtain an Adviser.

Marine Geology

Chemistry 180-201A, 180-301B, 180-213A,B; Geology 186-210B, 186-211A, 186-303D, 186-233B, 186-312B, 186-220B, 186-310D, 186-343D, 186-347B; Marine Scences 395-697B; Mathematics 189-222A,B; Physics 198-233A, 198-309A.

58 credits: consult the Department of Geological Sciences to obtain an Adviser.

Mathematics and Biology

Mathematics 189-221A,B, 222A,B, 223A, 315A,B, 317A, 319B, 323A,B, 324A,B, 327B; Computer Science 308-200A,B; Biology 177-201D, 205D, 206D, 301A,B, 303A, 305A, 309A.

Consult the Department of Mathematics to obtain an Adviser.

Mathematics and Chemistry

Chemistry 180-212A,B, 213A,B, 223A,B, 313A, 323B, nine credits Chemistry electives, three or six credits in electronics; Computer Science 308-200A,B; Mathematics 189-222A,B, 223A, 314A,B, 315A,B, 317A, 319B, 323A,B, 324A,B.

55-58 credits: consult the Department of Chemistry to obtain an Adviser.

Mathematics, Chemistry and Physics

Chemistry 180-213A,B, 223A,B, 212A,B, 313A, 323B, three credits chemistry electives; Computer Science 308-200A,B; Mathematics 189-222A,B, 223A, 314A,B, 315A,B, 319B; Physics 198-231A, 232B, 339B, six additional credits in Physics.

54 credits: consult the Department of Mathematics to obtain an Adviser.

Mathematics and Physics

Computer Science 308-200A,B; Mathematics 189-222A,B, -223A, -314A,B, -315A,B, -317A, -319B, -323A,B, -324A,B; Physics 198-231A,B, -232A,B, -233A, -341B, -346D, -431A, -432A or 434B, -437B or -438B plus 3 or 6 credits chosen from 198-339B, 308-210A,B, 189-415A, 189-419B, 189-555D.

58 credits: consult the Department of Physics to obtain an Adviser.

Mathematics and Psychology:

Mathematics 189-222A,B, 223A or 245A,B, 323A,B, 324A,B, 423A, 424B; Psychology 204-302A, 303B, 335A, 336B. Twelve credits selected from Mathematics 189-217A, 218B, 314A,B, 317A, 318A, 327B, 328B, 417A, 447B. Twelve credits selected from Psychology non-statistics courses; and three credits selected from Computer Science 308-200A,B, or 220A,B.

57 credits. (This faculty program leads to either a B.A. or a B.Sc. degree. Consult the Department of Mathematics or the Department of Psychology to obtain an Adviser.)

Microbiology and Immunology

U1: Biological Sciences Core Curriculum plus Chemistry 180-212A,B and 180-222A,B.

U2: Microbiology 528-311A, 528-314B; Biology 177-301A,B, 302A,B, 314A.

U2 and U3: Nine additional credits selected from courses offered by the Department.

53 credits: consult the Department of Microbiology and Immunology to obtain an Adviser.

Paleobiology

Biology 177-205D, 177-206D, 177-305A; Geology 186-234B, six credits chosen from 177-325A, 177-326B, 177-442D, 177-348D; Chemistry 180-213A,B; Geology 186-210B, 186-211A, 186-233B, 186-310D, 186-312A, 186-343D, 186-534D, and 3 approved credits.

57 credits: consult the Department of Geological Sciences to obtain an Adviser.

Physics

Mathematics 189-222A,B, 189-223A, 189-315A,B; Physics 198-231A,B, 198-232A,B, 198-233A, 198-235B, 198-328A,B, 198-329A,B, 198-346D; twenty-one credits chosen from: Geology 186-504B; Computer Science 308-200A,B; Mathematics 189-314A,B, 189-316B, 189-317A, 189-319A,B; Physics 198-331A, 198-334B, 198-341B, 198-431A, 198-432A, 198-434B, 198-437B, 198-438B, 198-439A,B, of which at least three credits must be chosen from the -400 series physics courses.

55 credits; consult the Department of Physics to obtain an Adviser.

Physiology

U1: Biology 177-201D; Chemistry 180-204A,B, 180-212A,B, 180-214B, 180-222A,B; Mathematics 189-231A,B and Physiology 552-211D.

U2 and U3: Biology 177-301A,B; one of Biology 177-309A, 177-373A, or Mathematics 189-232A,B; Physiology 552-311D and three credits in upper level Physiology Courses; and 14 credits in upper level Biological Sciences Courses.

58 credits: consult the Department of Physiology to obtain an Adviser.

Psychology

Any of the Major sequences in Psychology with the substitution of six credits from U2 courses in Psychology for Psychology 204-211D; 305A,B.

54 credits: consult the Department of Psychology, 392-4708, or Mr. Arnold Rosner, 392-4694 to obtain an Adviser.

Quaternary Studies

Anthropology 151-357A, Biology 177-205D*, 177-305A, 177-352A, 177-353B, 177-427A and either 177-432A, or 177-325A; Geography 183-271A*, 183-272B*, 183-321A, 183-324B, 183-305A, 183-451D and either 183-306A or 183-308B; Geology 186-431B.

*Courses that should be taken in U1.

54 credits: consult the Department of Geography to obtain an Adviser.

MAJOR PROGRAMS

Major programs are available in the following disciplines; details are listed with the departmental entries in this Announcement.

Anatomical Sciences
Biochemistry
Biology
Chemistry
Crystallography
Geography
Geological Sciences
Mathematics
Meteorology
Microbiology and Immunology
Physics
Physiology and Physics
Psychology
Solid Earth Geophysics

HONOURS PROGRAMS

Honours programs are available in the following disciplines; details are listed with the departmental entries.

Anatomical Sciences
Biochemistry
Biology
Chemistry
Crystallography
Geography
Geological Sciences
Mathematics
Meteorology
Microbiology and Immunology
Physics
Physiology
Psychology
Solid Earth Geophysics

INTERDEPARTMENTAL HONOURS PROGRAM IN IMMUNOLOGY

(see page 147)

ANATOMY (504)

Professors Y. CLERMONT *(Chairman);* C.P. LEBLOND; D.G. OSMOND
Associate Professors — B. KOPRIWA; P.K. LALA; D. LAWRENCE; N.J. NADLER; H. WARSHAWSKY
Assistant Professors — G.C. BENNETT; J.J.M. BERGERON; E. DANIELS; M.F. LALLI; H.J. MONIE; M. WEINSTOCK; W.E. WILSON
Lecturers — S.C. MILLER; L. HERMO; C.E. SMITH; J. WARD; P. WELLS
Strathcona Anatomy and Dentistry Building Room 1/48, Telephone: 392-4881.

The Department of Anatomy is deeply concerned with basic research and teaching in Human Anatomy at the undergraduate, graduate and Medical and Dental School levels. The Department houses several units doing basic research into the structure and function of cells, tissues and organs and is well equipped to pursue subjects in cell biology using modern techniques of radioautography and electron microscopy. To carry out research the Department contains numerous large laboratories, a complete radioautography unit and a large electron microscopy unit with five electron microscopes. The teaching program benefits from the use of an advanced T.V. system. Thus, students contemplating an academic career in the Anatomical Sciences have a unique opportunity to work with people actively engaged in advanced research and to observe the influence of their work on the teaching of Anatomy and Histology.

PROGRAMS IN THE ANATOMICAL SCIENCES

The following courses of the Biological Sciences core curriculum are required for all programs in Anatomical Sciences: Biology 177-201D; 177-205D; 177-206D; Mathematics: 189-231A,B; Biology 177-301A,B; 177-303A; one of the following; Biology 177-309B; 177-373A; Mathematics 189-232B; Psychology 204-204A,B. (Total of 27 credits).

Faculty Program

(Total of 60 required credits.) For details see Faculty Programs, page 135.

Majors Program

(Total of 60 required credits.)

The courses of the Biological Sciences core curriculum as listed above (27 credits); plus, Chemistry 180-212A,B; 180-222A,B; Anatomy 504-261A (Histology); 504-311A (Musculo-skeletal); 504-312B (Visceral); 504-321A (Neuroanatomy); 504-462D (Dynamic Histology); and 504-431D (Seminars). Students are also advised to take Physiology 552-211D as an elective.

Honours Program

(Total of 84 required credits.)

The Department offers an Honours Program for those students interested in a career in Anatomy. This program is the usual path for entry into Graduate studies in Anatomy. For the Honours program, students must have no failures in the CEGEP program and will register at the major level in U1. Entrance to the Honours Program is at the beginning of U2. The student must obtain a G.P.A. of at least 3.0 at the end of U1 with no subject below a "C" grade. It is expected that at the beginning of the third year, the students who wish to continue in the Honours Program will be those who feel that they have already committed themselves to a career in Anatomy. It will, therefore, be necessary to apply to the Departmental Chairman for maintenance of the Honours Program status at the beginning of U3. The Honours Degree will be recommended after successful completion of the Program with a C.G.P.A. of 3.0 with no course below a "C" grade at the end of U3.

The following courses constitute the Honours Program:

The courses of the Biological Sciences Core Curriculum as listed above (27 credits); plus, Chemistry 180-212A,B; 180-222A,B; 180-204A; Biology 177-302A,B; Anatomy 504-261A (Histology); 504-311A (Musculoskeletal); 504-312B (Visceral); 504-321A (Neuroanatomy); 504-462D (Dynamic Histology); 504-431D (Seminars); 504-533D (Experimental Morphology); 504-432D (Research), making a total of 84 credits.

Course Descriptions

Registration in all Anatomy courses is restricted due to limited laboratory space. Therefore, *all students* must obtain Departmental permission to register in *any* course; students in the Anatomical Sciences Programs must have a signed Study Plan Form from a Departmental Adviser; students in programs which specifically require Anatomy courses must obtain signed permission from the Department at the time of registration; students who select courses in Anatomy as electives must obtain a signed Conditional Permission form from the instructor in that course and will be informed during the first lecture as to whether they can remain in the course.

504-261A INTRODUCTORY HISTOLOGY. (4 credits; 3 hours lectures, 2 hours laboratory). A light and electron microscope study of the principal mammalian tissues and organs with emphasis on human histology. Open to U1 students who are taking the Biological Sciences core curriculum courses concurrently, or to U2 students. See registration restrictions above.

504-213A ANATOMY OF THE LIMBS AND BACK. (4 credits; 1 hour lecture, 6 hours laboratory dissection per week). A specialized course in the anatomy of the limbs and axial system designed for Physiotherapists. This course is open by permission only to other specially qualified individuals.

504-311A HUMAN MUSCULO-SKELETAL ANATOMY. (3 credits; 2 hours lectures, 2 hours laboratory; Prerequisites: Completion of the U1 Biological Sciences core curriculum courses). Introduction to regional human anatomy devoted to a study of the skeleton and muscular system of the limbs and back, and the neuro-vascular structures in these regions.

504-312B HUMAN VISCERAL ANATOMY. (3 credits; 2 hours lectures, 2 hours laboratory; Prerequisites: First year Biological Sciences core curriculum courses and 504-311A). An introductory course in regional human anatomy of the head, neck and trunk, including the visceral systems (circulatory, respiratory, digestive and reproductive systems). This course, together with 504-311A constitutes a complete course in human anatomy at the introductory level.

504-321A GENERAL HUMAN NEUROANATOMY. (3 credits; 2 hours lectures, 2 hours laboratory; Prerequisites: Biological Sciences core curriculum courses for U1, and at least one other Anatomy course which may be taken concurrently; or, in special cases, by permission of the Department). Introductory course in neuroanatomy emphasizing the structure and function of the brain, spinal cord and peripheral nerves. (Not open to students who have taken 504-421A).

504-462D DYNAMIC HISTOLOGY. (6 credits; 2 hours lectures supplemented by occasional laboratory and seminars at suitable intervals; Prerequisites: 504-261A and the Biological Sciences core curriculum courses for U1 and U2). An advanced course to cover topics such as cell cycle, cell population kinetics and turnover of cell components.

504-481B HUMAN EMBRYOLOGY AND DEVELOPMENT. (3 credits; 2 hours lectures, 2 hours laboratory; Prerequisites: Biological Sciences core curriculum courses for U1 and U2; 504-261A 504-311A and 504-312B). A comprehensive study of human developmental anatomy. *Not given in 1976-77.*

504-431D SEMINARS IN MORPHOLOGICAL SCIENCES. (6 credits). One advanced research seminar per week over the entire year given by invited local or out-of-town speakers on their own current research activities. All biological science

students are invited to attend, but only Anatomical Sciences Majors and Honours students can take this course for credit.

504-433D RESEARCH PROJECTS IN ANATOMICAL SCIENCES. (12 credits; 2 full days, supplemented by additional time, when available). Prerequisites: Honours in Anatomical Sciences in the U2 year; Corequisites: Honours Program in U3. A full year's exposure to individually supervised, original research in anatomical sciences. The concentration will be on the application of morphological methods such as electron microscopy and radioautography to the solution of basic problems in cell biology. A research report, plus an oral examination by a Departmental Committee will evaluate the candidate's performance. (Not open to students who have taken 504-432D).

504-533D EXPERIMENTAL MORPHOLOGY. (6 credits; 3 hours per week, plus additional sessions). Prerequisites: Honours Program in Anatomical Sciences in U2; Corequisites: Honours Program in U3. A lecture and practical course on the use of experimental techniques applicable to morphological research. This course is designed for Honours and graduate students only and stresses methods currently used in the Department, such as radioisotopic tracers, radioautography, light and electron microscopy. For Honours students, this course is a desirable laboratory supplement to Dynamic Histology (504-462D).

BIOCHEMISTRY (507)

Professors — A.F. GRAHAM *(Chairman);* M.J. FRASER; E.A. HOSEIN; D. RUBINSTEIN; S. SOLOMON; T.L. SOURKES, J.H. SPENCER; L.S. WOLFE

Associate Professors — R. BLOSTEIN; P.E. BRAUN; D.T. DENHARDT; R.M. JOHNSTONE; A.R. WASSERMAN *(on leave)*

Assistant Professors — E.M. HARPUR; R.E. MACKENZIE; E.A. MEIGHEN; S. MILLWARD; W. MUSHYNSKI

Emeritus Professor — K.A.C. ELLIOTT

Lecturer — M.R. REESAL

Research Associates — P.J. DOLPHIN; K. HARBERS

Associate Members — M.K. BIRMINGHAM *(Psychiatry);* L.F. CONGOTE *(Exp. Medicine);* J. DUPRE *(Exp. Medicine);* D. EDWARD *(Exp. Surgery);* W.C. GALLEY *(Chemistry);* L. GOODFRIEND *(Exp. Medicine);* L.M. JERRY *(Exp. Medicine);* H. PAPPIUS *(Exp. Neurochemistry);* J.F. PERDUE *(Lady Davis Institute);* C. SCRIVER *(Paediatrics);* J. SHUSTER *(Exp. Medicine)*

McIntyre Medical Sciences Building,
Room 802; Telephone 392-4243.

Living organisms — animals, plants, and microorganisms — derive nutrients from their environment and metabolize these various compounds by a series of converging pathways. A relatively small number of metabolites is thus obtained, and can be used to produce energy and as starting material for synthesis of cellular components. The energy produced is used to convert the compounds via a series of diverging metablic pathways into important building blocks for the synthesis of macromolecules; e.g. nucleotides for DNA synthesis, amino acids for protein synthesis.

The biochemist is interested in the coordination and regulation of the many processes involved in this general scheme. The study of each of these processes in detail results in areas of specialization. For example, biochemists are interested in the mechanisms of nervous activity, muscle contraction, growth and aging, inheritance and evolution. They are finding out how light is used in the production of organic matter by green plants and how some creatures produce light. The knowledge and methods developed by biochemists are applied in all fields of medicine, in agriculture, and in many industries. Biochemistry is a science which is contributing to far-reaching changes in the life of mankind.

The Department of Biochemistry at McGill occupies the 8th and 9th floors of the McIntyre Medical Sciences Building. The teaching and research laboratories were built in 1965 and are well equipped for modern biochemical research. All members of staff of the Department carry out research projects in collaboration with their students and postdoctoral fellows.

Honours, Major and Faculty programs are offered by this Department. The Honours program prepares students for postgraduate study in Biochemistry or a research career in hospital, university or industrial laboratories. The Major program is somewhat less specialised than the Honours program but provides a sound background for students who wish to have a professional career in Biochemistry and can also lead to postgraduate studies in the field. The faculty program is a more general program, offering students more opportunity to select courses in related fields of interest.

Inquiries about programs or courses should be directed to the Administrative Assistant, Department of Biochemistry, Room 802 McIntyre Medical Sciences Building, telephone: 392-5021.

FACULTY PROGRAM

For details see Faculty Programs, page 135.

Entrance requirements for the Faculty program are: 6 credits elementary Biology, 6 credits general Chemistry, 3 credits organic Chemistry, 6 credits Calculus, 8-9 credits Physics.

MAJOR PROGRAM

Entrance requirements for the Major program are: 6 credits elementary Biology, 6 credits general Chemistry, 3 credits organic Chemistry, 6 credits Calculus, 3 credits Analytical Geometry and Vectors, 8-9 credits Physics.

Students may transfer into the Major program at any time provided they have met all course requirements.

NOTE: Students who wish to qualify for admission to *L'Ordre des Chimistes,* must complete 6 additional credits in physical chemistry and 4 additional credits in laboratory work as options or electives in their course program.

The following courses are required to complete the Major program in Biochemistry:

(Total of 66-67 required credits.)

U1: (31-32 credits) Biology 177-201D; Chemistry 180-222A,B, 180-204A or 180-213A, 180-214B or 180-223B; one of the following: Physiology 552-211D or Biology 177-205D or Chemistry 180-281A *and* 180-253B; Math 189-222A,B; Chemistry 180-257D, and an additional 3 credit elective chosen in consultation with the adviser.

NOTE: If Chemistry 180-253B is taken as U1 option, then Chemistry 180-273A should be taken in U2.

U2: (29-32 credits) Biochemistry 507-302D; Biology 177-301A, 177-302B; one of the following: Biology177-309A, 177-373A, or Mathematics 189-315A,B; Chemistry 180-302A,B; 180-352B or 180-372B, plus Chemistry 180-362B, and 6-9 credits of electives chosen in consulatation with the adviser.

U3: (27-30 credits) Biochemistry 507-450A, 507-454A, plus 9 credits from the following: Biochemistry 507-404B, 507-456B; Biology 177-303A, 177-310B, 177-314A; Chemistry 180-253B, 180-273A, 180-313A, 180-352B, 180-372B, 180-387D, and an additional 12-15 credits of elective courses chosen in consultation with the adviser.

HONOURS PROGRAM

Admission to the Honours program will not be made until U2. Students who wish to enter the Honours program in U2 should follow the U1 Major program. Those who satisfactorily complete the U1 Major program with at least a GPA of 3.1 and B in every required course are eligible for admission to the Honours program.

There is no admission to the Honours program in U3.

Promotion to U3 year is based on satisfactory completion of U2 courses with a GPA of at least 3.2 and a B in every required course. In borderline cases, the mark received in Biochemistry 507-302D will be of particular importance for promotion to U3.

For graduation in the Honours program, the student must complete a minimum of 90 credits, pass all required courses with a grade of no less than B, and achieve a CGPA of at least 3.2.

Courses in the Chemistry Honours program may be substituted for comparable courses in the Biochemistry department with the permission of the Chemistry instructor. All other substitutions for required courses must have Biochemistry Departmental approval.

The following courses are required to complete the Honours program in Biochemistry:

(Total of 85 required credits)

U1: Students must complete the *U1 Major program* as prerequisite for admission to the Honours program at the U2 level. See Honours program description for further details.

U2: (29-33 credits) Biology 177-301A, 177-302B; Biochemistry 507-302D; Mathematics 189-315A,B; Chemistry 180-302A,B, 180-352B or 180-372B; plus Chemistry 180-362B; Chemistry 180-313A, plus a 3 credit science option.

NOTES: If Chemistry 180-253B is taken in first year then Chemistry 180-273A and 3 credits from: Physiology, Biology 177-205D or Biology 177-303A must be taken instead of Chemistry 180-313A; if one of these is a 6 credit course, 3 credits will satisfy the science option U2 requirement.

U3: (27-30 credits) Biochemistry 507-404B, 507-450A, 507-454A, 507-460A,B, plus 12 credits from the following lists of courses, 6 of which must be taken from List A.

List A: Biochemistry 507-503B, 507-456B; Biology 177-310B, 177-314A; Chemistry 180-475A.

List B: Biochemistry 507-491B; Biology 177-303A, 177-311B; Chemistry 180-352B, 180-372B, 180-381A, 180-387D, 180-392A,B, 180-402A; Microbiology 528-311A, 528-314B; Pharmacology 549-461D; Physiology 552-311D.

Consult the Department of Biochemistry to obtain an Adviser.

INTERDEPARTMENTAL HONOURS PROGRAM IN IMMUNOLOGY

The Departments of Biochemistry, Microbiology and Immunology and Physiology are offering an interdepartmental Honours program in Immunology. Details of this program may be found on page 172 of the Announcement.

COURSE DESCRIPTIONS

177-301A,/302B. LABORATORY IN CELL AND MOLECULAR BIOLOGY. PARTS I AND II. (See Biological Sciences Core Curriculum listings.)

507-302D METABOLISM AND REGULATION. (6 credits; Prerequisite: Biology 177-201D; Corequisites: Biology 177-301A, 177-302B). A general course in biochemistry, emphasizing the regulatory aspects of carbohydrate metabolism in mammalian

systems, and nitrogen metabolism in microorganisms and mammals, with special reference to the action of hormones, allosteric enzymes, and integration of cellular functions. (Not open to students who have taken 507-352D).
Professors Johnstone, Rubinstein and Staff

507-404B BIOPHYSICAL CHEMISTRY. (3 credits; Prerequisites: Chemistry 180-204A, 180-214B or 180-213A, 180-223B; Chemistry 180-313A recommended. This course is also listed as Chemistry 180-404B). Molecular weight determination and hydrodynamic parameters, optical properties and structure analysis of biopolymers and application to biological systems. (Not open to students who have taken or are taking Chemistry 180-404B, or have taken 507-451B).
Professors Meighen and Galley (Chemistry)

507-450A PROTEIN STRUCTURE AND FUNCTION. (3 credits; Prerequisites: Biochemistry 507-302D and/or sufficient organic chemistry. Intended primarily for Biochemistry and Chemistry students at the U3 level). Primary structures of proteins and their evolution. Secondary, tertiary and quaternary structure of enzymes. Enzyme kinetics and mechanisms of catalysis. Multienzyme complexes. Allosteric enzymes.
Professors Fraser and Meighen

507-454A NUCLEIC ACIDS. (3 credits; Prerequisite: Biochemistry 507-302D or permission of instructor). Chemistry of mammalian, bacterial and viral nucleic acids; synthesis of polynucleotides; replication, transcription, translation and the control thereof.
Professors Denhardt and Spencer

507-455B NEUROCHEMISTRY. (3 credits, Prerequisite: Biochemistry 507-302D) *Not offered in 1976-77.* Structure and composition of nervous tissue in relation to its functions. Special aspects of metabolism of nerve and brain including energy metabolism. Water and electrolyte balance. Exchanges between blood and brain, and between brain and cerebrospinal fluid. Neurotransmitters and modulators. Nutrition and development of the nervous system. Neuroendocrinology. Biochemistry of nervous and mental diseases.
Professors Sourkes, Wolfe and Staff

507-456B BIOCHEMISTRY OF MEMBRANES (3 credits; Prerequisites: Biochemistry 507-302D, Chemistry 180-214B or equivalent, or by consent of the instructors). This course will be offered in alternate years, commencing 1976-77. Intended for U3 level students. Biochemical and physiochemical approaches to membrane structure. Membrane biogenesis. Transport mechanisms and energy transduction in membrane systems. Immunochemical approaches to the cell surface. Receptor-effector interactions in membranes.
Professors Braun and Blostein

507-460A,B ADVANCED LABORATORY IN BIOCHEMISTRY. (6 credits; limited enrolment). The advanced biochemistry laboratory will consist of a set of experiments intended to illustrate various biochemical techniques.
Professors Denhardt, Millward and Staff

507-491B RESEARCH PROJECTS IN BIOCHEMISTRY. (6 credits; registration by departmental permission only; Prerequisite: Biochemistry 507-460A). Individual work on a project to be performed in a research laboratory.
Professor Braun and Staff

507-503B IMMUNOCHEMISTRY. (3 credits.) This course deals with the structure, genetics and function of immunoglobulins. Examples of immunochemical systems will be given.
Professors Shuster and Jerry

BIOLOGICAL SCIENCES — CORE CURRICULUM

The Core Curriculum in Biological Sciences is a group of courses designed to form a basis for university level programs in the Biological Sciences. Thus, the Core courses do not form a separate program, but are used by the sponsoring departments as part of their various departmental programs. The Core Curriculum is sponsored jointly by the Departments of Anatomy, Biochemistry, Biology, Microbiology and Immunology, and Physiology.

Students in programs related to other Departments may take individual courses from the Core Curriculum. It should be noted that most upper year courses in the Biological Departments will have some Core courses as prerequisites, so sequential planning of courses needs to be done carefully.

Inquiries concerning the Biological Sciences Core Curriculum should be directed to the office of the Core Curriculum Director, Stewart Biological Sciences Building, Room W4/9.

THE COURSES OF THE CORE CURRICULUM IN BIOLOGICAL SCIENCES

Course Descriptions

177-201D CELL AND MOLECULAR BIOLOGY. (6 credits; 2 or 3 lectures per week, 1 hour conference every alternate week; Prerequisite: 177-112B, or equivalent, i.e. CEGEP Cell Biology, or permission of course Co-ordinator.) This course is designed to give the student a comprehensive account of the cell in terms of its chemical and physical properties and includes discussions of cell ultrastructure; bioenergetics and biosynthetic pathways; selected biophysical processes; gene expression and regulation mechanisms operative in the control of metabolism. It will be assumed that students have already taken a minimum of 3 credits in organic chemistry (180-212A or equivalent.) Further credits in organic and physical chemistry are desirable.
Professor Sinclair and Staff

177-202B. BASIC GENETICS. (2 credits; 2 hours lectures, 1 hour conference; Prerequisites: 177-111A and -112B, or equivalent; Co-requisite: 177-201D). The principles of heredity in theory and practice illustrated mainly by examples from man. Not open to students who have taken or are taking 177-274A,B.
Professors Trasler and Boothroyd

177-205D BIOLOGY OF ORGANISMS. (6 credits; 3 hours lectures; Prerequisite: 177-111A or equivalent). A study of organisms from the standpoint of structural and physiological adaptation to the environment. Development of the basic levels of organization. Mechanisms of evolution. Adaptations necessary for major evolutionary advances. Life in aquatic, terrestrial and aerial environments.
Professor Manley (Marsden) and Staff

177-206D LABORATORY COURSE IN BIOLOGY OF ORGANISMS. (3 credits; 1 laboratory per week or its equivalent throughout the year; Co-requisite: 177-205D). A companion course to the lecture series in Biology of Organisms. Examination of the functional morphology of micro-organisms, plants and animals, both living and fossil. Experimental studies on the physiological adaptations of organisms to their environment.
Professor Pasztor and Staff

189-231A,B MATHEMATICS FOR BIOLOGISTS. (3 credits; 3 hours lectures; Prerequisite: 189-121A,B or equivalent). Introductory probability theory, vectors and matrices, differential and difference equations with applications to the biological sciences.
Professor Turner (Mathematics Dept.)

177-301A,B LABORATORY IN CELL AND MOLECULAR BIOLOGY (PART 1). (3 credits; 1 lecture and one 6-hour laboratory per week; Prerequisite: 177-201D). A half course in laboratory techniques. Together with 177-302A,B, this laboratory course is divided into three 8-week sections which are organized independently in three separate locations. Each section is divided into parts (a) and (b). The topics covered in each are listed under Biology 302A,B. Students taking Biology 301A may choose parts (a) and (b) of any one section, plus (a) of either section 2 or 3. Students taking Biology 301B start with part (b) of either section 2 or 3, followed by parts (a) and (b) of any other section.
Professor Poole and Staff

177-302A,B LABORATORY IN CELL AND MOLECULAR BIOLOGY (PART 2). (3 credits; 1 lecture and one 6-hour laboratory per week; Prerequisite: 177-301A,B; this course is restricted to those students whose programs require it). Together with Biology 301A,B this laboratory course is divided into three sections. Each section is divided into parts (a) and (b) listed below. Students required to take a full year of laboratory work, as recommended for certain programs, may do so by registering for 301A followed by 302B, or 301B followed by 302A. It is not possible to take 301A and 302A or 301B and 302B. These students will complete all experiments listed below (though not necessarily in sequence).

Section 1

a) Isolation of DNA, hydrolysis and paper and thin layer chromatography of bases. Metabolism of C^{14} by rat adipose tissue; chemical separation of metabolic products and radioactive counting.
b) Exercise on radioactivity and planchet counting. Subcellular fractionation of tissue; enzymic and chemical markers of organelles: brief enzymology.

Section 2

a) Ionization, pH and electrophoresis. Photosynthesis in green algae and in isolated chloroplasts. Isolation of mitochondria and study of electron transfer using oxygen electrodes. Spectrophotometry. Membrane potentials and ions.
b) Enzyme purification and assay. Protein measurement. Enzyme kinetics. Separation of proteins and estimation of molecular weight by gel filtration.

Section 3

a) Microbial metabolism: control mechanisms and inhibition of macromolecular syntheses.
b) Microbial genetics: conditional mutants of DNA synthesis and repair of DNA; bacteriophage growth; genetic fine structure analysis; chromosome mapping in bacteria.
Professor Poole and Staff

177-303A DEVELOPMENTAL BIOLOGY. (3 credits; 2 lectures and 2 hours discussion per week and 3-4 3-hour laboratories; Prerequisite: 177-201D). A course designed to acquaint the student with the fundamental processes and principles operating during embryogenesis of both plants and animals. The developmental process will be considered at the molecular, cellular and organismal levels to give a total appreciation of developmental phenomena.
Professors Fromson and Brandhorst

177-305A ENVIRONMENTAL BIOLOGY. (3 credits; 3 hours lectures; Prerequisite or Corequisite: 177-205D). An introduction to the principles of ecology, dealing with individuals, populations and communities of plants and animals, and concluding with a consideration of Man's relationship with the environment.
Professor Auclair and Staff

177-309A MATHEMATICAL MODELS IN BIOLOGY. (3 credits; 2-1/2 hours lectures per week; Prerequisites: 189-231A,B, and elementary calculus). Use of calculus, matrix algebra and probability

theory in analyzing mathematical models of biological problems.

Professor Glass (Physiology Department)

BIOLOGY (177)

Chairman F. Rigler

Professors — W.G. BOLL; E.R. BOOTHROYD; P.S. DIGBY; F.C. FRASER; S.P. GIBBS; P.R. GRANT; W.F. GRANT; G.A. MACLACHLAN; J.R. MARSDEN; J.D. METRAKOS; B.B. MUKHERJEE; C.M. WILSON

Associate Professors— A.N. AUCLAIR; A.H. BUSSEY; *(on leave)* R. CHASE; D. FROMSON; M.E. GOLDSTEIN; E. KAFER-BOOTHROYD; J. KALFF; W. LEGGETT *(on leave);* R.E. LEMON; G. MANLEY; *(on leave)* W.C. OECHEL *(on leave)*; V.M. PASZTOR; R.J. POOLE; R.O. SATTLER; R. SINCLAIR; K. SITTMANN; J.L. SOUTHIN; D. TRASLER; H. TYSON; N. WOLFSON

Assistant Professors — B.P. BRANDHORST; D.L. KRAMER; M. LECHOWICZ R.L. LEVINE; D.M. MADISON; R. PETERS; D.P.S. VERMA

Visiting Professor — J. GALE

Senior and Head Demonstrators — S. CAHN; J. MARVIN; C. McFARLANE; E. SHAPIRO;

Affiliated Staff — R.L. CARROLL *(Redpath Museum);* N. CROLL *(Parasitology Inst.); M.J. DUNBAR (Marine Science);* R. GOLD *(Paediatrics);* P. HECHTMAN *(Paediatrics);* C. LALLI *(Marine Sciences);* J. LEWIS *(Redpath Museum);* R. MACLEOD *(Microbiology Macdonald College);* J. McFARLANE *(Entomology);* E. MITCHELL *(Fisheries Research Board);* L. PINSKY *(Paediatrics);* H. REISWIG *(Redpath Museum);* H.M. Schulman *(Lady Davis Institute);* C.R. Scriver *(Paediatrics)*

Most staff and laboratories of the McGill Department of Biology are located in the Stewart Biological Sciences Building complex on McGregor Avenue (between Peel and Drummond.) The first six floors of the west wing (W2 to W7) and four floors of the north wing (N3 to N6) contain teaching and research laboratories, staff offices, services and administrative centres. The main office is in W4/room 5 (phone 392-4643). The Senior Program Adviser, Mrs. S. Cahn, is in room W3/19 (phone 392-5828), the Biology Student Union is in W2/4 (phone 392-5765). The south wing contains the greenhouses, Botany and Genetics Library (S3/1) and lecture theatres.

Some full-time and affiliated members of the Department have offices and laboratories elsewhere, e.g., at the Redpath Museum, Marine Sciences Centre, Macdonald College, Montreal Children's and Jewish General Hospitals, and some courses are conducted partly in these locations. Course field work is carried out in facilities at Mt. St. Hilaire, the Morgan Arboretum, Huntsman Marine Laboratories (New Brunswick), the Bellairs Research Institute (Barbados). Libraries at McGill which are used by biology students include the McLennan Undergraduate Library, the Blacker-Wood Library of Zoology, the Botany-Genetics Library and the McIntyre Medical Library.

The Department of Biology was created in June, 1970, by fusion of 3 former Departments (Botany, Genetics and Zoology). Currently it has approximately 50 teaching staff, 50 non-academic supporting staff (secretaries and technicians), 100 graduate students and/or postdoctoral fellows, and 8000 undergraduate course registrations.

This Department does not attempt to offer courses or programs in all branches of Biology. At the graduate level, its resources are focused on development of four main areas of study: Cell Molecular and Developmental Biology, Ecology, Human Genetics, Neurobiology and Behaviour. Major and Honours degrees are offered in these fields and also in Marine Biology and Plant Sciences. In order to ensure that its graduates have had a suitably broad general background in modern biology, whatever their branch of specialization, this department co-operates with four departments in the Faculty of Medicine to give a Core Curriculum of basic courses in the biological sciences. Much of the core is required for the various B.Sc. degree programs offered in these departments and most courses in U2 and U3 are given at a level which assumes one or another of the core courses as prerequisite.

Three types of programs lead to the B.Sc. degree in Biology (Faculty, Major and Honours). The Faculty and Major Programs can be used as prerequisites for entry here or elsewhere to various graduate programs in the biological and bio-medical sciences, or to professional schools (medicine, agriculture, nursing library science, education, etc.). They also fulfill direct requirements for many jobs, e.g. technical posts in industry and government laboratories, hospitals and research institutes. The Honours program is designed specifically for students intending to proceed to graduate school and to a research career, and is not recommended for students who do not have these interests or career objectives.

Entrance requirements to B.Sc. Programs are established by the Faculty of Science and, for the year 1976-77, include introductory courses in Mathematics, Physics, Chemistry and Biology. The *minimum* prerequisite in Biology is one course (currently Biology 301 at CEGEP or 177-111A, which deals mainly with Organismal Biology). Students intending to register in any B.Sc. or M.D. Program sponsored by the Biology or Medical Departments would be well advised to take in advance the companion Biology course (Biology 401 at CEGEP or 177-112B which deals mainly with Cell and Molecular Biology). Our registration advisers generally expect entering students who have not taken this course before to take the McGill equivalent before proceeding to the core course which builds on it (177-201D). The latter is also given on the assumption that students enter with a background in organic chemistry (e.g. Chemistry 202-202 at CEGEP or are

taking the McGill equivalent (180-212A,B) concurrently.

UNDERGRADUATE PROGRAMS

The courses listed below are not described in any great detail. For those who want more information, the department has prepared a "Blue Book" (sold at the McGill Bookstore), entitled DEPARTMENT OF BIOLOGY UNDERGRADUATE PROGRAMS 1976-77, which describes in detail the content of each course and the level at which it is given, the aims and methods used, lecturers, references, grading procedures, etc. The book also contains more information on registration, counselling, committee structure and the research interests and facilities which are represented in the department.

FACULTY PROGRAM

The Faculty Program in Biology has been designed with a minimum of specified required courses in order to accommodate those students who are either undecided about the area in which they wish to specialize or interested in combining biology with some other field not emphasized in this Department. Students registered in the Faculty Program may (with approval of a staff adviser) design their own programs around specific interests or to develop programs with a broader base by incorporating courses from other disciplines. Requirements of the Faculty Program in Biology are listed on p. together with other Science Faculty Programs; some of these include a sequence of courses in Biology.

MAJOR IN BIOLOGY

There are seven options in the Biology Major Program. These have been designed to offer specialized training in those areas of biology in which the Department has physical resources and the expertise to offer a variety of courses. They are recommended to students who have a clear interest in one of these subject areas, and who wish to obtain an intensive training in it. The requirements of the various options are listed below. Courses are listed in the recommended sequences taking prerequisites and time table into account.

NOTE: 301A,B. Because of space limitations, students in Animal Behaviour, Human Genetics and Marine Biology Option are requested to postpone 177-301A,B, until their final year. Students who need 177-301A,B, this year must obtain permission of the instructor.

ANIMAL BEHAVIOUR OPTION. (60 credits):

U1: Biology 177-201D, -202B (or 274A), -205D, -206D,

U1 or U2: Chemistry 180-212A,B;
Mathematics 189-231A,B;
Psychology 204-201D.

U2: Biology 177-391A, -392B.

U2 or U3: Biology 177-301A,B, -305A plus one of the following courses:
Biology 177-309A, -373A;
Mathematics 189-232A,B;
Psychology 204-204A,B.

Plus 15 credits in U2 or U3 from the following:
Biology 177-303A, -325A, -326B, -348D, -349B, -351B, -354B, -385B, -386A, -389B, -394B, -427A, 477A,B (or 478A,B) -493B;
Psychology 204-300A, -308D, -309B, 340A, -404B, -423A,- 424B.

CELL, MOLECULAR AND DEVELOPMENT OPTION. (61 credits):

U1: Biology 177-201D, -202B (or -274A), -205D, -206D;
Chemistry 180-212A,B, -222A,B.

U1 or U2: Chemistry 180-204A;
Mathematics 189-231A,B.

U2: Biology 177-301A,B, -302A,B, -303A.

Plus one of the following courses:
Biology 177-309A, -373A;
Mathematics 189-232A,B.

Plus 9 credits in U2 from the following:
Biology 177-310B, -313B or 321A, -318B or -320B;
Chemistry 180-214B (required for 177-479D or -480D), -302A,B or
Biochemistry 507-302D.

Plus 9 credits in U2 or U3 from the above or the following:
Biology 177-305A (or other whole organism course — see Blue Book for list), -311B, -312Å, -314A, -316B, -319C, -323B, -350A, -357A -417A, -422A, -465B, -476B, -477A,B, (or -478A,B);
Anatomy 504-261A;
Biochemistry 507-404B, -450A, -454A;
Microbiology and Immunology 528-314B, -423A, -424A;
Physiology 552-411A;
Physics 198-217B.

ECOLOGY OPTION. (60 credits):

U1: Biology 177-201D, -202B (or -274A), -205D, -206D, -305A;
Chemistry 180-212A,B;
Mathematics 189-231A,B.

U2 or U3: Biology 177-301A,B, -303A and one of the following courses:
Biology 177-373A (recommended) or one of Biology 177-309A, Mathematics 189-232A,B.

Plus 12 credits in U2 or U3 from the following:
Biology 177-325A, -326B, -328B, -331F, -385B, -427A, -429A

Plus 11 or 12 credits, in U2 or U3, from the above or the following:
Biology 177-334B, -345A, -348D, -349B, -350A, -351B, -354B, -355A, -357A, -358A, -391A, -392B, 432A, 442D, -477A,B (or -478A,B), -578B;
Geography 183-321A, -423B, -451D;
Computer Science 308-220A,B.

HUMAN GENETICS OPTION. (58 or 59 credits):

U1: Biology 177-201D, -202B, or 274A, -205D, -206D;
Chemistry 180-212A;
Mathematics 189-231A,B.

U1 or U2: Chemistry 180-222A,B, -204A.

U2: Biology 177-370B.

U2 or U3: Biology 177-301A,B, -303A, -372B and one of the following courses:
Biology 177-373 (recommended) or one of
Biology 177-309A,
Mathematics 189-232A,B,
Psychology 204-204A,B.

Plus 12 credits, in U2 or U3 from the following:
Biology 177-305A, -310B, -313B or -321A, -314A, -320B, -417A, -476B -422A, 477A,B (or -478A,B)
Psychology 204-430B;
Biochemistry 507-302D or
Chemistry 180-302A,B;
Microbiology and Immunology 528-314B.

MARINE BIOLOGY OPTION. (58 or 59 credits):

U1 Biology 177-201D, -202B or -274A, -205D, -206D;
Chemistry 180-212A,B, -222A,B;
Mathematics 189-231A,B.

U2 or U3: Biology 177-301A,B, -305A, -348D, -442D.

Plus 12 credits in U2 or U3 from the following:
Biology 177-303A, -328B, -349B, -351B, -359B, -373A*;
Biology 177-384A, -432A.

* 177-373A is recommended, but may be replaced by Mathematics 189-232A,B, or Psychology 204-204A,B.

NEUROBIOLOGY AND COMPARATIVE PHYSIOLOGY. (57 credits):

U1: Biology 177-201D, -202B or -274A, -205D, -206D;
Mathematics 189-231A,B;
Chemistry 180-212A,B.

U2 or U3: Biology 177-301A,B, -305A, -386A, -389B
and one of the following courses:
Biology 177-309A, -373A;
Mathematics 189-232A,B;
Psychology 204-204A,B;

U3: Biology 177-587B or 588A

Plus 15 credits in U2 or U3 from the following:
Biology 177-303A, -311B or 390B, -345A, -350A, -385B, -391A, -392B, -394B, -477A,B (or -478A,B), -587B or -588A;
Psychology 204-308D*, -321A, -342B*, 422B*, -423A*, -424*;
Biochemistry 507-302D*, -455B*;
Anatomy 504-321B;
Physiology 552-312D*, -455D*;
Experimental Medicine 516-502D.

*For courses in Departments other than Biology, prerequisites will have to be taken as electives

PLANT SCIENCE OPTION (60 credits)

U1: Biology 177-201D, -202B or 274A, -205D, -206D;
Chemistry 180-212A,B;
Mathematics 189-231A,B.

U1, U2 or U3: Biology 177-301A,B, -305A, -355A, -357A, -358A, -429A.

Plus 18 credits from the following:

U1-U3: Biology 177-303A, -316B, -356B, -359B, -361A, -362A, -363B, -364B;
Chemistry 180-222A,B.

U3: Biology 177-465B, -477A,B, (or 478A,B);
Geography 183-451D.

HONOURS IN BIOLOGY

The Honours program in Biology is designed expressly as a preparation for graduate studies and research, and provides students with a broad training in Biology and some research experience in a chosen area. A student may apply to enter the Honours program from any of the Biology Major Options at the end of the U2 year. Requirements for Honours are: 1) a cumulative GPA of 3.5 or better at the end of U2; 2) acceptance of a 9-credit Independent Studies proposal (see listing of 177-479D for details); 3) attainment of a minimum GPA of 3.2 in the U3 year; 4) adherence to the following program:

U1: (24 or 25 credits): Biology 177-201D, -202B or -274A, -205D, -206D; Chemistry 180-212A,B; Mathematics 189-231A,B.

U1-U3: (42 credits): Biology 177-301A,B, -303A, -305A, -373A; plus 24 credits biology and science courses to fulfil one Major option; plus 6 credits post-core biology courses not listed in above Major Program.

U3: (13 credits): Biology 177-479D, -499D.

COURSE DESCRIPTIONS

Pre-Core Courses

177-111A PRINCIPLES OF ORGANISMAL BIOLOGY. (3 credits; 2 lectures and one 3-hour laboratory per week; Prerequisite: none.) This course is an

introduction to the structure, function and adaptation of plants and animals in the biosphere. Open to all students (B.Sc., B.A., B.Ed., B.Eng., etc.) wishing introductory biology. This course serves both as a prerequisite for Biology 177-205D and 177-206D, and as an alternative to CEGEP Organismal Biology.
Professors Levine and Goldstein

177-112B INTRODUCTION TO CELL AND MOLECULAR BIOLOGY. (3 credits; 2 lectures and a 3-hour laboratory or seminar period per week; Prerequisite: none). The cell: ultrastructure, division, chemical constituents and reactions. Bioenergetics: photosynthesis and respiration. Principles of genetics and the molecular basis of inheritance. This course serves as a prerequisite for Biology 177-201D and as an alternative to CEGEP Cell Biology.
Professor Southin

*The Courses of The Core Curriculum in Biological Sciences**

177-201D CELL AND MOLECULAR BIOLOGY. (6 credits)

177-202B BASIC GENETICS. (2 credits)

177-205D BIOLOGY OF ORGANISMS. (6 credits)

177-206D LABORATORY COURSE IN BIOLOGY OF ORGANISMS. (3 credits)

189-231A,B MATHEMATICS FOR BIOLOGISTS. (3 credits)

177-301A,B LABORATORY IN CELL AND MOLECULAR BIOLOGY (PART 1). (3 credits)

177-302A,B LABORATORY IN CELL AND MOLECULAR BIOLOGY (PART 2). (3 credits)

177-303A DEVELOPMENTAL BIOLOGY. (3 credits)

177-305A ENVIRONMENTAL BIOLOGY. (3 credits)

177-309A MATHEMATICAL MODELS IN BIOLOGY. (3 credits)

**Complete descriptions of these courses may be found on page 142.*

Post-Core Courses

177-274A PRINCIPLES OF GENETICS. (3 credits; 3 hours lectures, 1 hour conference, optional; Prerequisites: 177-111A and -112B or equivalent). A survey of the gene as the fundamental unit of heredity, with a special emphasis on human genetics. Not open to students who have taken or are taking 177-202B.
Professor Metrakos and Staff

177-310B GENERAL MOLECULAR GENETICS. (3 credits; 3 hours lectures, one period every other week used for conferences; Prerequisite: 177-201D). *Not given in 1976-77; given in 1977-78.* A survey of current topics in molecular genetics, including the replication, transcription and translation of nucleic acids and the regulation of these processes.
Professor Bussey

177-311B BIOPHYSICAL APPROACH TO CELL FUNCTION. (3 credits; 2 hours lectures, 1 hour seminar; Prerequisites: 177-201D, 180-214B). Structure and function of membranes: state of membrane lipids, transport mechanisms, electrical potentials, electron transfer, phosphorylation and energetics of photosynthesis and respiration.
Professor Poole

177-312A CELL GROWTH. (3 credits; 2 hours lectures, 1 hour conference; Prerequisite: 177-201D). *Given in 1976-77; not given in 1977-78.* Molecular events, metabolism and control mechanisms in the growth and death of cell populations *in vivo* and *in vitro*. Molecular and organelle progression through the cell cycle. Models of cell growth.
Professor Sinclair

177-313B THE ULTRASTRUCTURAL BASIS OF CELL FUNCTION. (3 credits; 2 hours lectures, 2 hours seminar; Prerequisite: 177-201D). *Given in 1976-77; not given in 1977-78.* A detailed discussion of the functional organization of cells.
Professor Gibbs

177-314A MOLECULAR BIOLOGY OF SOMATIC CELLS. (3 credits; 3 hours lectures; Prerequisite: 177-201D). The notable advances made in recent years toward understanding the molecular and genetic basis of the origin of cancer cells will be discussed. The course will begin with discussions on the basic aspects of molecular biology and genetics of somatic cells, followed by a detailed analysis of the mechanism of cell transformation by oncogenic tumour viruses.
Professors Mukherjee and Pinsky

177-316B PLANT GROWTH AND MORPHOGENESIS. (3 credits; 2 hours lectures and seminar; Prerequisite: 177-357A or permission of instructor). *Not given in 1976-77; given in 1977-78.* Physiological, biochemical and physiological-genetic approaches to the study of growth, differentiation and morphogenesis. Hormones and growth regulators, environmental control, physiology of reproduction, and senescence are discussed at a more advanced level than in 357A.
Professor Boll

177-318B DEVELOPMENTAL BIOLOGY, EXPERIMENTAL. (3 credits; 1 hour lecture, 1 hour discussion, 3 hours laboratory; Prerequisite: 177-303A and/or permission of instructor). *Not given in 1977.* Developmental parallels between unicellular and multicellular organisms in the areas of environmental inductions, immuno-differentiation, growth, morphogenesis and differentiation. Laboratory projects concern external influences on development, using protozoa as experimental organisms.
Staff

177-319C DEVELOPMENTAL BIOLOGY, MARINE. (Field course; 3 credits; 3 weeks fulltime, lectures and laboratory; Prerequisite: 177-3J3A or equivalent, permission of instructor). *Not given in 1976-77.* The course includes both comparative and experimental studies on embryos of marine organisms available at the Huntsman Marine Laboratory, St. Andrews, in the spring.
Staff

177-320B GENE ACTIVITY IN DEVELOPMENT. (3 credits; 2 hours lectures, 1 hour discussion; Prerequisites: 177-303A; 177-310B recommended, or permission of instructor). An assessment of the experimental work dealing with gene activity and its regulation during embryological development. Topics: gene amplification; DNA, RNA, and protein synthesis during embryogenesis; nucleocytoplasmic interactions; hormones as regulators of gene activity and models of differentiation.
Professors Fromson and Brandhorst

177-321A CYTOLOGY AND CYTOGENETICS. (3 credits; 2 hours lectures, 3 hours laboratory; Prerequisites: 177-201D; 177-202B or -274A). The genetic apparatus, from molecules to chromosomes, is studied with respect to structure, behaviour and function. The main stress is on chromosomes of higher organisms, somatic and meiotic, relating structure and function.
Professor Boothroyd

177-323B TOPICS IN CYTOLOGY AND CYTOGENETICS. (1 credit; 1-2 hours seminar and discussion: Prerequisite: 177-321A). Selected topics in cytology and cytogenetics will be considered in depth through student seminars and discussions, and occasional lectures.
Professor Boothroyd

177-325A PROCESSES IN EVOLUTIONARY ECOLOGY. (3 credits; 2-1/2 hours lectures and 1/2 hour conference; Prerequisite: 177-305A, 202B or -274A; only one, either 177-325A or -372B can be taken for credit). *Not given in 1976-77; given in 1977-78.* Genetic properties and dynamics of natural populations with emphasis on qualitative traits. Models of population growth, mating systems, genetic variance, and types of natural selection.
Professor Sittmann

177-326B PATTERNS IN EVOLUTIONARY ECOLOGY. (3 credits; 2 hours lectures, 1 hour conference; Prerequisite: 177-325A). The evolution of ecological characteristics, chiefly at the population level. The influence of natural selection upon birth rates, brood size, parental care, age at first breeding, longevity, maximum population size, feeding strategies, competitive relations, polymorphism, mimicry, dispersal, habitat selection, etc.
Professor P.R. Grant

177-328B RESOURCE BIOLOGY. (3 credits; 2 hours lectures, 2 hours conference; Prerequisite: 177-305A or permission of instructor). *Not given in 1976-77; given in 1977-78.* A study of the nature of renewable resources, theoretical and applied aspects of management and exploitation, and methods of obtaining data required in decision making. Emphasis on animal populations.
Professor Leggett

177-331F ECOLOGY FIELD COURSE. 12 day Field Course in early September, with a comprehensive report to be prepared during 'A' term. (3 credits; Prerequisites: 177-205D, 305A and permission of instructor). Methods of sampling natural populations of animal and plant species in fresh water and terrestrial habitats. Estimating population size from samples. Energy flow determinations. Construction of a simple model of an ecosystem, using field estimates for each compartment.
Professor P.R. Grant and Staff

177-334B ARCTIC ECOSYSTEMS. (3 credits; 2 lectures, 1 conference; Prerequisite: 177-305A or permission of instructor). *Given in 1976-77; not given in 1977-78.* This course investigates the biotic and abiotic environment of arctic ecosystems. The patterns of production, energy flow, nutrient cycling and adaptations to the arctic are covered. Unique aspects of the arctic are emphasized, and the environmental impact of northern development is considered.
Professor Oechel and Staff

177-345A BIOLOGY OF SYMBIOSIS. (2 credits; 2 hours lectures; Prerequisite: Permission of instructor required). Amongst the interspecific associations between organisms there is a wide spectrum from relatively casual relationships to the obligatory forms of mutualism and parasitism that is symbiosis. A perspective will be presented of these associations and the best understood will be considered in depth.
Professor Croll and Colleagues (Parasitology Institute)

177-346A PHILOSOPHY OF BIOLOGY. (3 credits; 3 hours lectures or conferences; Prerequisite: Any introductory biology course; *Given in 1976-77; not given in 1977-78.* An introduction to the philosophical foundations of biology and their relevance to research and theories in various biological disciplines.
Professor Sattler

177-347B HISTORY OF BIOLOGY. (3 credits; 3 hours lectures; Prerequisite: Any introductory biology course). *Not given in 1976-77; given in 1977-78.* The development of scientific observation and measurement in plant and animal anatomy, comparative morphology, ecology, embryology, physiology and palaeontology. Theories of the relationships of living organisms, their parts and their evolution. Biological expeditions, societies and journals.
Professor Dunbar

177-348D THE BIOLOGY OF INVERTEBRATE. (6 credits; 2 hours lectures and 3 hours laboratory; Prerequisites: 177-205D, -206D). A survey course of the invertebrate groups (with the exception of terrestrial arthropods) stressing comparative morphology, functional anatomy and relationships between major taxa.
Professor Reiswig

177-349B BIOLOGY OF FISHES. (3 credits; 2 lectures and 1 laboratory per week; Prerequisites: 177-205D, -206D or permission of instructor). An advanced course in the biology of fishes with emphasis on their ecology, behavior, and adaptation to specific environmental conditions.
Professor Able

177-350A INSECT DEVELOPMENT AND PHYSIOLOGY. (3 credits; 2 lectures and one 3-hour laboratory; Prerequisites: 177-201D, -205D and -206D, or permission of instructor). The physiology of growth and development in insects, and the physiological relations of insects to their environment.
Professor McFarlane (Entomology Department)

177-351B BIOLOGY OF MAMMALS. (3 credits; 2 lectures and 1 laboratory per week; Prerequisites: 177-205D, -206D or permission of instructor). The biology of mammals including their ecology, behavior and adaption to specific ways of life.
Professor Mitchell

177-352A VERTEBRATE EVOLUTION. (3 credits; 3 hours lectures; Prerequisites: 177-205D, -206D or equivalent). Development of modern evolutionary theory, particularly as it applies to vertebrates. The origin and evolution of the major groups of vertebrates, their anatomy, phylogeny and zoogeography.
Professor Carroll

177-353B PROBLEMS IN VERTEBRATE EVOLUTION. (3 credits; 1 hour lecture, 6 hours laboratory; Prerequisite: 177-352A). Investigation of current problems in the phylogeny and anatomy of vertebrates; laboratory work with fossil vertebrates and extensive use of literature. A series of problems will be investigated involving each of the major vertebrate groups.
Professor Carroll

177-354B BIOLOGY OF BIRDS. (3 credits; 2 hours lectures and 3 hours laboratory; Prerequisites: 177-205D, -206D). A course emphasizing the adaptations of birds to their peculiar mode of life, including aspects of anatomy, physiology, behaviour (migration, flight, displays, vocalizations), avifaunas and evolution. Laboratory exercises and spring field trips. Introduction to local and world avifaunas.
Professor Lemon and Staff

177-355A PLANT ANATOMY. (3 credits; 2 hours lectures. 3 hours laboratory; Prerequisite: 177-201D, -205D, -206D or permission of instructor). *Not given in 1976-77; given in 1977-78.* An introduction to the general organization and development of cells, tissues and organs, the relation of anatomy to other biological disciplines and everyday life. The laboratory includes sectioning, fixing, staining, photography, etc.
Professor Sattler

177-356B THE FLOWER. (3 credits; 2 hours lectures, 3 hours laboratory; Prerequisites: 177-201D, -205D, -206D, -355A). *Not given in 1976-77; given in 1977-78.* The morphology, anatomy, development, adaption and evolution of the flower. Brief consideration also will be given to the importance of the flower is history, art and literature. The practical work will include a project, which will be carried out during the laboratory periods.
Professor Sattler

177-357A PLANT PHYSIOLOGY. (3 credits; 2 hours lectures, 3 hours laboratory. Prerequisites: 177-201D, -205D). *Given in 1976-77; not given in 1977-78.* Topics include water relations, nutrition, some physiological aspects of respiration and photosynthesis, translocation of solutes, elementary growth and development, response to environmental factors and adaption.
Professor Boll

177-358A CANADIAN FLORA. (3 credits; 2 hours lectures, 3 hours laboratory. Field trips early in the term; Prerequisite: 177-111A or equivalent). A study of the higher plants occurring naturally in Canada, including their recognition, collection, identification and classification.
Staff

177-359B THE ALGAE. (3 credits; 2 hours lectures, 3 hours laboratory; Prerequisite: 177-205D or permission of instructor). The study of the morphology, cytology (including ultrastructure), aspects of physiology, aquaculture, and the ecology of the major groups of the algae.
Professor Goldstein

177-361A BRYOPHYTA AND PTERIDOPHYTA. (3 credits; 2 hours lectures, 3 hours laboratory; Prerequisites: 177-205D, -206D). *Not given in 1976-77.* Discussion of the organization and evolution of bryophytes and pteridophytes.
Staff

177-362A MYCOLOGY I. (3 credits; 2 hours lectures, 3 hours laboratory; Prerequisite: Introductory course in Biology). General characteristics of the slime molds, Phycomycetes and Ascomycetes (Lower Fungi). Emphasis is placed upon the role of these fungi among living things, including their means of reproduction and utilization of complex organic matter.
Professor Wilson

177-363B MYCOLOGY II. (3 credits; 2 hours lectures, 3 hours laboratory; Prerequisite: Introductory course in Biology). General characteristics of Basidiomycetes and Fungi Imperfecti. Role of the higher fungi among living things including reproduction,

utilization of complex organic matter, geographical distribution, mycorrhizal associations and economic factors. Isolation and culture techniques of fungi in general.
Professor Wilson

177-364B ORIGIN AND USE OF CULTIVATED PLANTS. (3 credits; 2 hours lectures; 3 hours laboratory; Prerequisite: Introductory course in Biology). This course will deal with the rise of early civilizations which first cultivated plants, and the importance of cultivated plants in the advance of man from a primitive to a civilized state, ending with the present world food crisis.
Professor Wilson

177-370B GENETICS OF MAN. (3 credits; 3 hours lectures; Prerequisites: 177-201D, -202B or -274A, or permission.) A contemporary view of the genetic factors determining human characteristics, normal and abnormal.
Professors Fraser, Metrakos and Mukherjee

177-372B POPULATION GENETICS. (3 credits; 2-1/2 hours lectures and 1/2 hour conference; Prerequisite: 177-202B or -274A, -205D, or permission of instructor). Topics include Hardy-Weinberg equilibrium in random mating populations, inbreeding coefficient and rate of gene loss, separation of phenotypic variation into genetic and environmental components, correlated characters, genotype and environment interaction.
Professors Sittmann and Tyson

177-373A BIOMETRY. (3 credits; 2 hours lectures, 2 hours laboratory, Prerequisite: 189-112A,B or the equivalent). Elementary statistical methods for testing hypotheses and designing experiments in biology. Least squares procedures for fitting models in regression and analysis of variance. Students who have, or are taking, certain equivalent statistical courses elsewhere in the University, for example, 204-204A,B, may not take this course. A list of these equivalent courses is available in the Biology Department's Handbook.
Professor Tyson

177-384A PHYSIOLOGY OF MARINE ORGANISMS. (3 credits; 2 lectures and 1 laboratory per week; Prerequisites: 177-205D, -206D, or permission of instructor). Physiology of marine organisms, with special reference to physiological principles underlying operation of the various systems. This course is complementary to 177-390B.
Professor Digby

177-385B ENVIRONMENTAL PHYSIOLOGY OF ANIMALS. (3 credits; 2 hours lectures, 3 hours laboratory; Prerequisites: 177-201D, -205D, -206D, -305A or instructor's permission). The physiological adaptations of organisms to different environments with emphasis on the interactions between internal controls and the environment.
Professor Peters

177-386A NEUROBIOLOGY. (3 credits; 3 hours lectures; Prerequisite: 177-205D). A comparative study of information processing in sensory systems of animals, the integrative networks within the nervous system, and the co-ordination of the various muscle systems.
Professor Pasztor and Staff

177-389B LABORATORY IN NEUROBIOLOGY. (3 credits; 1 hour lecture; 5 hours laboratory; Prerequisites: 177-386A; and, if other than Neurobiology Major, permission of instructor). Provides experience in the methods of neurobiological research; experiments include extracellular and intracellular recording from nerve cells, electrical stimulation, and the study of neuro-behavioural problems.
Professor Chase and Staff

177-390B FUNDAMENTALS OF PHYSIOLOGICAL ACTION. (3 credits; 2 hours lectures, 3 hours laboratory; Prerequisites: 177-205D, -206D, or permission of instructor). Fundamental basis of physiological mechanisms mainly as applied to zoological material. Surface phenomena and gas layers; ionic phenomena; electrokinetic effects in biological material; organic semiconductors; pressure sensitivity; photosensitization, calcification in shell, bone and teeth, and properties of artificial membranes. Designed for students of comparative physiology and marine biology. This course is complementary to 177-384A.
Professor Digby

177-391A. ANIMAL BEHAVIOUR I: PHYSIOLOGY AND MOTIVATION OF BEHAVIOUR. (3 credits; 2 hours lectures plus tutorial; Prerequisites: 177-205D, 206D). The study of motivational, sensory and motor aspects of behaviour as interpreted by ethologists.
Professors Lemon and Kramer

177-392B ANIMAL BEHAVIOUR II: SOCIOBIOLOGY. (3 credits: 2 hours lectures, 1 hour tutorial; Prerequisites: 177-205D; -305A and -391A strongly recommended). An introductory but comprehensive study of the social behaviour, social organization, and communication systems of animals from a zoological perspective. Emphasis is on natural behaviour patterns and their adaptive significance.
Professor Madison

177-394B LABORATORY IN ETHOLOGY. (3 credits; Prerequisites: 177-391A or -392B and permission of instructor). A series of projects both in the laboratory and on weekend field trips during which students observe the behaviour of animals (primarily vertebrates) and subsequently prepare scientific reports of their findings. Primarily for senior students enrolled in the Animal Behaviour Major Program, intending to pursue postgraduate studies.
Professor Madison and Staff

177-417A DEVELOPMENTAL MAMMALIAN GENETICS. (3 credits; lectures and seminars; Prerequisites: 180-204A, -222A,B; 177-202B or -274A, -303A, -310B; -372B recommended; permission of

instructor required). An advanced course for final year students where the main emphasis will be on experiments where gene differences altering development or environmentally-induced differences in embryonic development throw light on the processes of normal mammalian development.
Professor Trasler

177-422A GENETIC REGULATION AND RECOMBINATION IN HIGHER ORGANISMS. (2 credits; 2 lectures per week, occasional seminars; Prerequisites: 177-202B or -274A, and -301A,B; -310B recommended). An advanced course on regulation of gene replication, function and recombination in higher organisms. (177-422A and -522B replace 177-422D; not open to students who have taken 177-422D).
Professor Kafer-Boothroyd

177-427A ECOSYSTEMS. (3 credits; 2 hours lectures, 3 hours laboratory; Prerequisites: 177-305A). A comparative study of North American ecosystems including arctic tundra, grassland, and coniferous, deciduous, and tropical rain forests. Emphasis is given to functional attributes such as energy and nutrient flux, system regulation, productivity, and efficiency. Systems analysis and the relevance of these properties to management of individual ecosystems will be discussed.
Professor Auclair

177-429A PHYSIOLOGICAL PLANT ECOLOGY. (3 credits; 2 hours lectures, 3 hours laboratory, field trips; Prerequisite: 177-305A). A consideration of physiological responses and adaptations of plants to their environment. Contemporary approaches to the measurement and study of relevant physiological and micro-environmental parameters will also be presented.
Professor Gale

177-432A LIMNOLOGY. (3 credits; 2 hours lectures; 1 hour conference; Prerequisite: 177-305A). A study of the physical, chemical and biological characteristics of fresh-water, with emphasis on the role of the plankton in the economy of lakes. (Not open to students who have taken 177-430A).
Professor Kalff

177-442D BIOLOGICAL OCEANOGRAPHY. (6 credits; 3 hours lectures, several 3 hour laboratory periods; Pre- or Corequisites: 177-305A, -348D). An introduction to the physical and chemical factors of the marine environment, the ecological divisions of the ocean, history and methods of marine research. An ecological account of marine populations in relation to their physical and chemical environment; marine plankton and production processes, marine pollution. (Not open to students who have taken 177-440A or 177-441B).
Professors Lewis, Lalli, Dunbar (Marine Sciences)

177-465B TOPICS IN PLANT BIOCHEMISTRY. (3 credits; Lectures and discussion; Prerequisites: 177-201D; -303A, 507-302D recommended). A review by lectures, seminars and discussion of important advances in recent years, e.g. molecular structures of macromolecules, biosynthetic processes, mechanisms of hormone action, metabolic regulation.
Professor Maclachlan

177-476B HUMAN BIOCHEMICAL GENETICS. (4 credits; 3 hours lectures with some student participation; Prerequisites: 177-201D, -202B or -274A, 180-302A,B, 189-231A,B). An up-to-date and comprehensive account of the biochemical aspects of human genetics, and relationship of this knowledge to broader questions including evolution, eugenics and treatment of genetic disease.
Professors Gold, Pinsky, and Scriver

177-477A,B INDEPENDENT STUDIES IN BIOLOGY. (3 credits; open to U2 and U3 students only; Prerequisite: Projects have to be arranged individually with instructors). Research or reading projects, permitting independent study under the guidance of a staff member in the Biology Department specializing in the field of interest.
Staff

177-478A,B INDEPENDENT STUDIES IN BIOLOGY. (3 credits; open to U2 and U3 students only; Prerequisite: Projects have to be arranged individually with instructors). Research or reading projects, permitting independent study under the guidance of a staff member in the Biology Department specializing in the field of interest.
Staff

177-479D INDEPENDENT STUDIES IN BIOLOGY. (9 credits; 8-12 hours per week research project and related seminars; Prerequisites: restricted to U3 students in Biology Honours Program. Projects must be arranged individually with and accepted by instructors. A written proposal outlining the studies to be undertaken must be submitted to the Biology Curriculum Committee by the end of the spring term in the U2 year. The proposal will be reviewed by a committee composed of two instructors in the student's field of study plus one from the Curriculum Committee. Notice of the Committee's decision will be forwarded by mail during the summer). A program of study designed to provide an introduction to the design, execution and reporting of research. The number of projects that can be handled is limited and their quality will be examined carefully. Proposals should therefore be considered as competitive.
Staff

177-480D INDEPENDENT STUDIES IN BIOLOGY. (12 credits; 10-15 hours per week research project and related seminars; Prerequisites: restricted to U3 students in Biology Honours Program. Projects must be arranged individually with and accepted by instructors. A written proposal outlining the studies to be undertaken must be submitted to the Biology Curriculum Committee by the end

of the spring term in the U2 year. The proposal will be reviewed by a committee composed of two instructors in the student's field of study plus one from the Curriculum Committee. Notice of the Committee's decision will be forwarded by mail during the summer). A program of study designed to provide an introduction to the design, execution and reporting of research. The number of projects that can be handled is limited and their quality will be examined carefully. Proposals should therefore be considered as competitive.
Staff

177-493B UNDERGRADUATE SEMINAR IN ANIMAL BEHAVIOUR. (3 credits; 2 hours seminar; Prerequisite: Permission of instructor). A senior course considering in depth topics of current interest, which may range from physiological to ecological aspects of behaviour according to the interest of the class.
Professor Kramer and Staff

177-499D HONOURS SEMINAR IN BIOLOGY. (4 credits; weekly seminars). Honours students in Biology will attend a selected series of guest speaker seminars of general interest, and participate in discussions led by the speaker or a staff member specializing in the field. In addition, groups of students will participate in a chosen series of specialized seminars and present approximately 2 seminars.
Professor Kafer-Boothroyd and Staff

177-500C ADVANCED TECHNIQUES IN CELL AND MOLECULAR BIOLOGY. (3 credits; 1 lecture and 6-8 hours laboratory per day during a 3-4 week summer session, starting 1976; Prerequisites: 177-301A,B, -302A,B and permission of the instructor). This course is intended for selected cell and molecular biology honours and graduate students. Techniques used are those involved in molecular studies of transcriptional and translational regulation in eucaryotic cells, e.g., nucleic acid and protein synthesis *in vitro, de novo* synthesis of enzymes, nucleic acid hybridization, cell fractionation and analytical methods, etc.
Professor Verma

177-522B TOPICS IN GENETIC REGULATION AND RECOMBINATION. (2 credits; irregular schedule of seminars and conferences; Prerequisite: 177-422A). Investigation and discussion of recent advances in molecular genetics including genetic regulation of protein synthesis, DNA-repair, recombination, etc., and their relevance to studies in higher organisms, including man. (Not open to students who have taken 177-422D).
Professor Kafer-Boothroyd

177-524B MOLECULAR BIOLOGY OF DEVELOPMENT. (2 credits; Prerequisites: 177-201D, -303A, -320B; or permission of the instructors) Given in 1976-77, not given in 1977-78. An advanced seminar course covering the most recent research in molecular biology of development. Examples from both plant and animal systems will be examined and presented. Students will prepare and present seminars covering topics related to the regulation and control of gene expression in developing eucaryotic organisms.
Professors Brandhorst, Fromson, and Verma

177-575A ADVANCES IN POPULATION GENETICS. (3 credits; 2 lecture hours, 1 conference; Prerequisites: 177-373A, -325A or -372B). *Not given in 1976-77; given in 1977-78.* Discussion of recent advances in genetics relevant to population biologists in ecology and human genetics.
Professors Sittmann and Tyson

177-587B DEVELOPMENTAL NEUROBIOLOGY. (3 credits; 2 seminar hours or 2 lecture hours; Prerequisites: 177-303A, -386A or 204-308D). Discussion and lectures of current research in the field. Topics encompass all aspects of development from neuroembryology to neural regeneration in adult animals. Critical analysis of presented material is encouraged. (Not open to students who have taken 177-487B).
Professors Levine and Marsden

177-588A ADVANCED NEUROBIOLOGY. (3 credits; 2 hours seminar; Prerequisite: 177-386A or permission of instructor.) Discussion primarily of important current research. Topics emphasize cellular neurophysiology and the functional organization of nervous systems. Includes both vertebrate and invertebrate material. (Not open to students who have taken 177-488B).
Staff

177-595A ADVANCED SEMINAR IN BEHAVIOUR. (3 credits; 2 hour seminars; Prerequisites: 177-391A or -392B or equivalent and permission of instructor). Given in 1976-77, not given in 1977-78. A graduate level seminar concerned with mechanisms in animal behaviour. Selected topics include sensory mechanisms of communication, social behaviour and organization, animal orientation, physiological correlates of behaviour, and the sequential and temporal organization of behaviour. The emphasis will be on studies having a zoological perspective.
Professors Madison and Lemon

177-596A SEMINAR IN BEHAVIOURAL ECOLOGY. (3 credits; Prerequisite; permission of instructor). Not given in 1976-77, given in 1977-78. A graduate level seminar course concerned with ecological and evolutionary perspectives on behaviour. Potential topics include aspects of altruism, grouping, mating systems, feeding strategies, antipredator behaviour, habitat selection and the inheritance of behaviour.
Professors Kramer and P. Grant

CHEMISTRY (180)

Professors — J.F. HARROD *(Chairman);* B. BELLEAU; I.S. BUTLER; G.C.B. CAVE; J.T. EDWARD; A. EISENBERG; B.C. EU; D.F.R. GILSON; D.N. HARPP; G. JUST; S.G. MASON; M. ONYSZCHUK; D. PATTERSON; A.S. PERLIN; R.F. ROBERTSON; L.E. ST. PIERRE; M.A. WHITEHEAD; C.A. WINKLER; L. YAFFE

Associate Professors — T.H. CHAN; P.G. FARRELL; J.M. FRESCO; W.C. GALLEY; A.E. GROSSER; J.J. HOGAN; K.K. OGILVIE; D.J. SIMKIN;

Assistant Professors — B.C. SANCTUARY; A.G. SHAVER

Associate Members — G. DONNAY *(Crystal Chemistry);* H. GOLDSMITH *(Medicine);* O.A. MAMER *(University Clinic)*

Senior Research Associate — D.A.I. GORING

Research Associates — H. BOLKER; D.G. GRAY; R. ST. JOHN MANLEY; A.A. ROBERTSON

Senior Instructors — J. BIRNIE; R. BROWN; J. FINKENBINE; E. HEYGE; D. JEFFRIES

Otto Maass Chemistry Building; Departmental Office, Room 322, Telephone: 392-4469; Student Advisory Office, Room 125A, Telephone: 392-8086.

Chemistry is both a pure science, offering its students a challenging intellectual pursuit and, simultaneously, an applied science whose technology is of fundamental importance to our economy and society. The modern chemist seeks an understanding of the structure and properties of atoms and molecules. He uses this knowledge to predict and interpret the properties and transformations of matter and the energy changes that accompany those transformations. Many of the concepts of Physics and the methods of Mathematics are basic to Chemistry, while Chemistry is in turn of fundamental importance to many other disciplines such as: the Biological and Medical Sciences, Geology, Metallurgy, etc.

A degree in Chemistry can lead to a wide variety of professional vocations. The large science-based industries (petroleum refining, plastics, pharmaceuticals, etc.) all employ chemists in research and development and in quality control. Many federal and provincial departments and agencies employ chemists in research and testing laboratories. Such positions are expected to increase with the currently growing concern for the environment and for consumer protection. A background in chemistry is also useful as a basis for advanced study in other related fields, such as medicine and the biological sciences. For a business career, a B.Sc. in Chemistry can profitably be combined with a master's degree in Business Administration.

Chemistry courses at the university level are traditionally divided into four areas of specialization: 1) organic chemistry, dealing with the compounds of carbon; 2) inorganic chemistry, concerned with the chemistry and compounds of elements other than carbon; 3) analytical chemistry, which deals with the identification of substances and the quantitative measurement of their compositions; and 4) physical chemistry, which treats the physical laws and energetics governing chemical reactions. Naturally there is a great deal of overlap between these different areas, and the boundaries are becoming increasingly blurred. After a general course at the collegial level, courses in organic, inorganic, analytical and physical chemistry are offered through the university years. Since chemistry is an experimental science, laboratory classes accompany most undergraduate courses. In addition, courses are offered in polymer, nuclear, radio and biological chemistry to upper year undergraduates.

There are two main programs in Chemistry, Honours and Major. The Honours program is intended primarily for students wishing to pursue graduate studies in Chemistry. While the Major program is somewhat less specialized, it is still recognized as sufficient training for a profession in Chemistry. It can also lead to graduate studies although an additional qualifying year may be necessary. There are also a number of Faculty programs available (see page 135). Interested students may inquire about these at the Student Advisory Office.

CORE CURRICULUM IN CHEMISTRY

The Core Curriculum in Chemistry consists of 36 specified credits in Chemistry to which must be added a minimum of 17 credits in Mathematics and Physics. The courses at present in the Core Curriculum are listed below.

Chemistry U1: 180-281A,B, (3 credits); 180-257D, (4 credits); 180-253B, (2 credits); 180-273A, (1 credit).

Chemistry U2: 180-352B, (3 credits); 180-302A,B, (3 credits); 180-392A,B, (3 credits); 180-381A, (3 credits); 180-387D, (4 credits); 180-356A, (2 credits); 180-353A, (1 credit); 180-373B, (2 credits); 180-383B, (1 credit); 180-363D, (4 credits).

Physics U1: 198-232A,B, (4 credits).

Physics U2: 198-339B, (4 credits) or Computer Science 308-200A,B, (3 credits);

Mathematics U1: 189-222A,B, (3 credits); 189-223A, (3 credits);

Mathematics U2: 189-315A,B, (3 credits).

A further 14 required credits in Chemistry are optional courses at the CEGEP level and it is hoped that the majority of Honours and Major candidates will have taken at least 6 of these credits at the CEGEP level. The McGill numbers corresponding to these 14 credits are listed below. Students who have not taken these courses or their equivalents at the CEGEP level must do so to be eligible candidates for Honours or Major degrees in Chemistry.

Chemistry: 180-212A,B, (4 credits); 180-213A,B, (3 credits); 180-222A,B, (4 credits); 180-223A,B, (3 credits).

The Core Curriculum is common to both the Major and the Honours program. Because students may have had individual variations in their CEGEP programs, the particular core courses taken in U1 and U2 will vary.

HONOURS IN CHEMISTRY

The Honours program in chemistry is the Core Curriculum normally taken in U1 and U2 and an additional 18 credits in chemistry elected from the U3 honours courses. Of the 18 credits 198-465D, MATHEMATICAL PHYSICS FOR CHEMISTS, will be acceptable for four credits. Admission to the Honours program is by application to the Chemistry Department.

Research project courses 180-480A,B (3 credits) and 180-490A,B (6 credits) are available as options to U3 honours chemistry students. These courses must be taken as a 9 credit package.

MAJOR IN CHEMISTRY

The Major in Chemistry is the Core Curriculum taken over the three university years. All courses chosen outside the Core Curriculum will be free electives. Students intending to major in chemistry may, on application to the Department, be granted permission to take U3 Honours courses in Chemistry as part of their electives. Admission to the Major program is by application to the Chemistry Department.

FACULTY PROGRAMS IN CHEMISTRY

Faculty programs in Chemistry are constructed from the U1 courses and the general courses of U2 and U3 intended for these students. (See page 135).

Six courses in general analytical chemistry, 180-207A, -217A, -227B, -237B, -247A, and -267B, are listed to permit the synthesis of an individualized program in chemical analysis.

COURSE DESCRIPTIONS

180-110A GENERAL CHEMISTRY I. (3 credits: 3 lectures, 1 tutorial, Prerequisites/Corequisites: College level mathematics and physics). A study of the fundamental principles of atomic structure; valence theory: periodic table; gaseous, liquid and solid states; solutions of non-electrolytes.
Staff

Laboratory: (2 hours). Illustrative experiments.
Mrs. Birnie

180-120B GENERAL CHEMISTRY II. (3 credits; 3 lectures, 1 tutorial; Prerequisite: Chemistry 110A). A continuation of Chemistry 110A. A study of the fundamental principles of physical chemistry including thermodynamics, chemical equilibria, acids and bases, ionic equilibria, electrochemistry, redox reactions, chemical kinetics, and the structures and reactions of the simpler aliphatic and aromatic organic compounds.
Staff

Laboratory: (2 hours). Illustrative experiments.
Mrs. Birnie

180-201A. MODERN INORGANIC CHEMISTRY (3 lectures, 1 tutorial; Prerequisites: Chem. 110A and 120B or equivalent courses). The course deals with the chemistry of selected main group elements and their role in our everyday lives. The course is based on a series of self-study modules; a minimum of three background modules (on atomic structure and chemical bonding) and five other modules chosen by the student must be completed.
Professor Shaver

180-204A INTRODUCTORY PHYSICAL CHEMISTRY FOR BIOLOGICAL SCIENCE STUDENTS I. (3 credits; 3 lectures; Prerequisites: Chem. 120B or equivalent and one full course in calculus). Similar to 180-213A,B. An emphasis is placed on the use of biological examples to illustrate the principles of Physical Chemistry. The relevance of physical chemistry to biology is stressed.
Professor Galley

180-207A GENERAL ANALYTICAL CHEMISTRY I. (1 credit; 1 lecture; Prerequisites: Chem. 110A and 120B or equivalent courses). Lecture portion of an individualized program in analytical chemistry. Lecture sequences and laboratories (if any) to be selected by the student and adviser.
Professor Fresco

180-212A,B INTRODUCTORY ORGANIC CHEMISTRY I. (4 credits; 3 lectures; Prerequisites: Chem. 110A and 120B or equivalent courses). A survey of reactions of aliphatic and aromatic compounds including modern concepts of bonding, mechanisms, conformational analysis and spectra.
Professors Farrell and Ogilvie

Laboratory: (3 hours). Illustrative experiments.
Professor Farrell and Mrs. Heyge

180-213A,B INTRODUCTORY PHYSICAL CHEMISTRY I. (3 credits; 3 lectures; Prerequisites: Chem. 120B or equivalent; Math. 189-120 and 121 or equivalent). First law of thermodynamics, enthalpy, thermochemistry, bond energies. Second law of thermodynamics; the entropy and the free energy functions. Chemical and thermodynamic equilibrium states. Phase rule. Colligative properties of ideal solutions. Selected special topics which may include chemical kinetics, electrochemistry and others.
Professors Eisenberg and Patterson

180-214B INTRODUCTORY PHYSICAL CHEMISTRY FOR BIOLOGICAL SCIENCE STUDENTS II. (3 credits; 3 lectures; Prerequisites: Chem. 213A,B or Chem. 204A or equivalent). Similar to 180-223A,B. An emphasis is placed on the use of biological examples to illustrate the principles of physical chemistry. The relevance of physical chemistry to biology is stressed.
Professor Galley

180-217A,B GENERAL ANALYTICAL CHEMISTRY LABORATORY I. (1 credit; 3 hours; Prerequisites: Chem. 110A and 120B or equivalents). Laboratory portion of an individualized program in analytical chemistry. Laboratory experiments to be selected by the student and adviser.
Professor Fresco

180-222A,B. INTRODUCTORY ORGANIC CHEMISTRY II. (4 credits; 3 lectures; Prerequisite: Chem. 212A). Modern spectroscopic techniques for structure determination. The chemistry of alkyl halides, alcohols, ethers, carbonyl compounds and amines with special attention to mechanistic aspects. Special topics.
Professors Ogilvie and Farrell

Laboratory: (3 hours). Illustrative experiments.
Professors Ogilvie and Farrell and Mrs. Heyge

180-223A,B INTRODUCTORY PHYSICAL CHEMISTRY II. (3 credits; 3 lectures; Prerequisite: 180-213A,B or equivalent). Schroedinger Wave Equation; Energy states of atoms; Theory of chemical bonding; Atomic and Molecular structure; Spectroscopy; Electrical and magnetic properties of molecules; statistical thermodynamics. (Not open to students who have taken 180-214B).
Professor Simkin

180-227B GENERAL ANALYTICAL CHEMISTRY II. (1 credit; 1 lecture; Prerequisite: Chem. 207A). Lecture portion of an individualized program in analytical chemistry. Lecture sequences and laboratories (if any) to be selected by the student and adviser.
Professor Fresco

180-237B GENERAL ANALYTICAL CHEMISTRY LABORATORY II. (1 credit; 3 hours; Prerequisites: Chem 217A,B). Laboratory portion of an individualized program in analytical chemistry. Laboratory experiments to be selected by the student and advisor.
Professor Fresco

180-247A GENERAL ANALYTICAL CHEMISTRY LABORATORY III. (2 credits; 6 hours; Prerequisites: Chem. 110A and 120B or equivalents). Laboratory portion of an individualized program in analytical chemistry. Laboratory experiments to be selected by the student and advisor.
Professor Fresco

180-253B ADVANCED CHEMICAL THERMODYNAMICS. (2 credits; 2 hours; Prerequisite: Chem. 213A,B or equivalent). For Honours and Major Chemistry students. Thermodynamics of non-electrolyte solutions: partial molar volumes and enthalpies; chemical potentials; regular solution theory; equilibrium between solution and vapour phase; standard states, activities, activity coefficients; phase rule; phase diagrams. Electrolyte solutions; conductivity of solutions; electrode processes; transport numbers; thermodynamics of electrolyte solutions; electromotive force of cells.
Professor Patterson

180-257D INTRODUCTORY ANALYTICAL CHEMISTRY. (4 credits; 1 lecture, 4 hours laboratory and 1 homework tutorial; Prerequisites: Chem. 110A and 120B or equivalents). For Honours and Major Chemistry students. A rigorous survey of analytical chemistry including theory and practice of representative gravimetric, volumetric and instrumental methods.
Professor Fresco

180-267B GENERAL ANALYTICAL CHEMISTRY LABORATORY IV. (2 credits; 6 hours; Prerequisites: Chem. 110A and 120B or equivalents). Laboratory portion of an individualized program in analytical chemistry. Laboratory experiments to be selected by the student and advisor.
Professor Fresco

180-273A CHEMICAL KINETICS. (1 credit; 1 lecture: prerequisite: Chem. 204A or Chem. 213A,B or equivalent). For Honours and Major Chemistry students. Other students with permission of the lecturer. Order, molecularity, reaction mechanisms, first, second and third order rate constants. Determination of order, effect of temperature on rate, activated state theory. Collision theory. Reactions in solution, homogeneous catalysis.
Professor Grosser

180-281A,B CHEMISTRY OF THE MAIN GROUP ELEMENTS. (3 credits; 3 lectures; Prerequisites: Chemistry 110A and 120B or equivalents). For Honours and Major Chemistry students. Current theories of atomic structure, chemical bonding and stereochemistry are reviewed and then applied in a systematic survey of the main group elements and their compounds, with emphasis on trends in physical and chemical properties, molecular and ionic geometries, and mechanisms of reactions.
Professor Onyszchuk

180-301B MODERN INORGANIC CHEMISTRY II. (3 credits; 3 lectures; Prerequisites: Chem. 110A and 120B or equivalent courses). Modern concepts of metallic bonding will be reviewed. Crystal field theory and molecular orbital theory of coordination compounds will be described. The chemistry of transition metal coordination compounds will be treated in some detail from the viewpoint of structural, chemical, mechanistic and spectroscopic behaviour.
Professor Shaver

180-302A,B INTRODUCTORY ORGANIC CHEMISTRY III, POLYFUNCTIONAL AND BIOMOLECULES. (3 credits; 3 lectures; Prerequisites: Chem.

212A and Chem. 222A,B). Application of the concepts of organic chemistry to selected biological systems.
Professor Harpp

180-307B THE ANALYTICAL CHEMISTRY OF POLLUTANTS. (2 credits; 2 lectures; Prerequisites: One course in analytical chemistry and one in physical chemistry). Not offered in 1976-77. Description of current analytical practices in air and water pollution; critical evaluation of the reliability of the methods, with particular emphasis on interfering substances; rudiments of automated instrumentation; toxicological analysis as it relates to pollution.
Professors Cave and Fresco

180-313A INTERMEDIATE PHYSICAL CHEMISTRY I. (3 credits; 3 lectures; Prerequisite: Chem. 223A,B or Chem. 214B). A survey course in physical chemistry beyond the introductory level.
Professor Robertson

180-323B INTERMEDIATE PHYSICAL CHEMISTRY II. (3 credits; 3 lectures; Prerequisite: Chem. 223A,B or Chem. 214A). A survey course in physical chemistry with a special emphasis on spectroscopy.
Professor Simkin

180-331A INORGANIC CHEMISTRY OF THE SOLID STATE. (3 credits; 3 lectures; Prerequisites: Chem. 110A and 120B or equivalents). Primarily, but not exclusively, for students in the Faculty of Engineering. Electronic structure and properties of the elements in relation to the Periodic Table. The Solid state: structure, bonding, magnetic properties of metals and alloys. Descriptive chemistry of the metals.
Professor Hogan

180-352B STRUCTURAL ORGANIC CHEMISTRY. (3 credits; 3 lectures; Prerequisite: Chem. 302A,B). For Honours and Major Chemistry students. Modern methods of structure determination, chemical and spectroscopic techniques; stereochemistry.
Professor Perlin

180-353A SURFACE CHEMISTRY. (1 credit; 1 lecture; Prerequisites: Chem. 253B and Chem. 273A). For Honours and Major Chemistry students. The nature of surfaces. The thermodynamics of surfaces. The effect of temperature and pressure on surface energies. The wetting of solids. Binary liquid systems and the surface excess. Physi- and chemisorption of vapours on solids.
Professor Robertson

180-356A INTRODUCTORY QUANTUM CHEMISTRY. (2 credits; 2 lectures; Prerequisites: Chem. 253B and Chem. 273A). For Honours and Major Chemistry students. A rigorous mathematical development of quantum mechanics up to and including the hydrogen molecular ion.
Professor Whitehead

180-362A,B ADVANCED ORGANIC LABORATORY. (2 credits; 4 hours; Prerequisite or corequisite: Chem. 302A,B). An advanced laboratory of experiments related to the theoretical principles, synthetic methods and instrumental techniques of modern organic chemistry. The laboratory uses in part a modular format of self-paced and self-guided instruction. A program of modules is selected in consultation with the instructor.
Professor Chan and Dr. Finkenbine

180-363A,B PHYSICAL CHEMISTRY LABORATORY. (2 credits; 3 hours; Prerequisites: Chem. 253B and Chem. 273A). For Honours and Major Chemistry students. Selected experiments to illustrate physico-chemical principles. (Not open to students who have taken 180-363D).
Professor Winkler and Dr. Brown

180-372B SYNTHETIC ORGANIC CHEMISTRY. (3 credits; 3 lectures; Prerequisites: Chem. 302A,B). Synthetic methods in organic chemistry.
Professor Harpp

180-373B MOLECULAR SPECTROSCOPY. (2 credits; 2 lectures; Prerequisite: 180-356A). For Honours and Major Chemistry students. A general survey of the principles of molecular spectroscopy, including electronic, vibrational, and rotational spectroscopy, nuclear and electron spin resonance and Mossbauer effect.
Professor Gilson

180-381A CHEMISTRY OF THE TRANSITION ELEMENTS. (3 credits; 3 lectures; Prerequisite: Chem. 281A,B). For Honours and Major Chemistry students. The history of transition chemistry, coordination numbers and geometry, nomenclature and symmetry. Crystal field theory will be described and applied to problems in spectroscopy, magnetochemistry, thermodynamics and kinetics. Molecular orbital theory is applied to carbonyl and organometallic compounds.
Professor Harrod

180-383B INTRODUCTORY STATISTICAL MECHANICS. (1 credit; 1 lecture; Prerequisite: Chem. 356A; Corequisite: Chem. 373B). For Honours and Major Chemistry students. Fundamental assumptions of the statistical method, Maxwell-Boltzmann distribution law. Ideal monatomic, diatomic and polyatomic gases.
Professor Eu

180-387D ANALYTICAL CHEMISTRY. (4 credits; 1 lecture; 3 hours laboratory and 1 hour tutorial; Prerequisites: Chem. 257D and Chem. 253B). For Honours and Major Chemistry students. A rigorous treatment of the theory underlying analytical processes; application of selected techniques, followed by an original project.
Professor Cave

180-392A,B or D INTEGRATED INORGANIC/ORGANIC LABORATORY. (3 credits; 4 hours; Corequisites: Chem. 381A and Chem. 352B). An

advanced laboratory for Honours and Major Chemistry students. The laboratory uses a modular format of self-paced and self-guided instruction. A program of modules is selected in consultation with the laboratory staff. The experimental modules consist of projects related to the theoretical principles, synthetic techniques and instrumental methods used in modern organic, inorganic and organometallic chemistry.
Professors Harrod, Chan, and Dr. Finkenbine

180-393A,B PHYSICAL CHEMISTRY LABORATORY. (2 credits; 3 hours; Prerequisites: Chem. 253B and Chem. 273A). For Honours and Major Chemistry students. Selected experiments to illustrate physico-chemical principles. (Not open to students who have taken 180-363D).
Professor Winkler and Dr. Brown

180-402B ADVANCED BIO-ORGANIC CHEMISTRY. (3 credits; 2 hours lecture, 1 hour seminar per week; Prerequisite: Chem. 302A,B). The application of advanced concepts of organic and physical chemistry to biological systems. The properties of amino acids, peptides, proteins, enzymes, nucleosides, etc., will be discussed and their relationship to biochemical reactions, the origins of life, coenzymes, template syntheses, neurochemistry, etc.
Professor Belleau

180-404B BIOPHYSICAL CHEMISTRY. (3 credits; 3 lectures; Prerequisites: Chem. 204A and 214B or 213A,B and 223A,B). Molecular weight determination, hydrodynamic and spectroscopic properties of biopolymers. The structure and dynamics of biopolymers and biolgical systems.
Professors Galley and Meighen (Biochemistry)

180-411A AN INTRODUCTION TO RADIOCHEMISTRY. (3 credits; 3 lectures; Prerequisites: Chem. 204A and 214B or equivalents). The basic concepts of nuclear chemistry will be described mainly in a qualitative way. Such topics as forces within nuclei, theories of nuclear structure, radioactive decay, nuclear reactions and fission, particle accelerators and reactors, radiocarbon dating, and tracer technique will be treated. (Not open to students who have taken 180-311A).

180-447A INSTRUMENTAL ANALYSIS. (3 credits; 2 lectures; 3 hours laboratory). Not offered in 1976-77. For Honours students in Biochemistry only. A survey of instrumental methods of analysis.
Professor Cave and Colleagues

180-452A PHYSICAL ORGANIC CHEMISTRY. (3 credits; Prerequisite: Chem. 352B). Intended primarily for Honours Chemistry students. The correlation of theory with physical measurements on organic systems; an introduction to photochemistry; solvent and substituent effects on organic reaction rates, etc.; reaction mechanisms.
Professor Edward

180-455B INTRODUCTORY POLYMER CHEMISTRY. (3 credits; Prerequisites: Chem. 213A,B, 223A,B, 273A). For Honours and Major students. A survey course on the structure of polymers, kinetics and mechanisms of polymer synthesis; molecular weight distributions; polymer configurations and the thermodynamics of polymer solutions; rubber, elasticity, osmometry and viscosity.
Professor St. Pierre

180-457B INSTRUMENTAL METHODS OF ANALYSIS. (3 credits; 2 lectures and 3 hours laboratory). For Honours students. Other students with permission of the lecturer. Mass spectrometry; gas chromatography; infrared spectroscopy; X-ray diffraction and fluorescence spectrometry; Raman spectroscopy; thermal analysis; flame photometry; activation analysis, polarography.
Professor Cave and Colleagues

180-475A CHEMICAL KINETICS. (3 credits; 3 lectures; Prerequisite: Chemistry core). Kinetic laws, measurement of reaction rates, transition state and collision theory, elementary gas phase reactions. Elementary reactions in solution, reaction mechanisms in solution, reactions on surfaces and in solid state. Heterogeneous catalysis. Complex reactions, homogeneous reactions.
Professor Grosser

180-476B QUANTUM CHEMISTRY. (3 credits; 3 lectures; Prerequisite: Chemistry core). A rigorous mathematical survey of various theories of molecular structure.
Professor Whitehead

180-477A. ELECTROANALYTICAL CHEMISTRY. (3 credits; 2 lectures, 3 hours laboratory; Prerequisite: Chemistry 387D). Not offered in 1976-77. For Honours Chemistry students. Other students with permission of the lecturer. Mass-transfer processes; theory of electrochemical processes in analytical chemistry; determination of the composition and stabilities of organic and inorganic species in aqueous and nonaqueous solvents.
Professors Cave and Fresco

180-480A,B FINAL YEAR RESEARCH PROJECT. (3 credits; Prerequisite or Corequisite: Chem. 490A,B.D; registration by departmental permission only). A course designed to give Honours students an optional foretaste of research experience. The student will be assigned a project supervisor and a research project at the beginning of the session. The project will consist of a literature survey, experimental work, a written research report and an oral examination.
Staff

180-481B MODERN TOPICS IN INORGANIC CHEMISTRY. (3 credits; Prerequisites: Chem. 281A,B and 381A). Chemistry Honours students only. An introduction to areas of current interest in inorganic chemistry.
Professors Harrod, Hogan, Onyszchuk and Shaver

180-482B ADVANCED ORGANIC CHEMISTRY. (3 credits; Prerequisite: Chem. 352B). Intended primarily for Honours Chemistry students. Synthetic methods in organic chemistry.
Professor Chan

180-485A SURFACE AND COLLOID CHEMISTRY. (3 credits; Prerequisite: Chemistry core). A topical course on the physica chemistry of phase boundaries. Topics covered vary from year to year and generally include: propertes of surfaces; monolayers; colloidal dispersions; spreading and wetting phenomena; absorptior; translational and rotary Brownian motion.
Professor Mason

180-487A SELECTED TOPICS IN MODERN ANALYTICAL CHEMISTRY. (3 credits; Prerequisite: Chem. 387D). Honours Chemstry students. Other students with permission of the lecturer. Current theories of aqueous and nonaqueous solutions, with application to analytical chemistry; recent advances in analytical techniques (topics covered vary from year to year and may include chromatography; applications of kinetics, solvent extraction and thermal analysis) with emphasis on their theoretical basis.
Professors Fresco and Cave

180-490A,B,D FINAL YEAR RESEARCH PROJECT. (6 credits; 16 hours laboratory; Prerequisite or Corequisite: Chem. 480AB; Registration by departmental permission only). For description, see 180-480A,B.
Staff

180-493A INTRODUCTION TO STATISTICAL THERMODYNAMICS. (2 credits; 2 lectures; Prerequisite: Chemistry core). Fundamental principles of statistical mechanics; microcanonical and canonical ensembles; thermodynamic functions of ideal gases; theories of solids, chemical equilibria; absolute reaction rate theory; Van der Waals gases; real gases; lattice statistics.
Professor Eu

180-497B ANALYTICAL SPECTROSCOPY. (3 credits; 2 lectures and 3 hours laboratory; Prerequisite: Chem. 387D). *Not offered in 1976-77.* For Honours Chemistry students. Other students with permission of the lecturer. Spectrophotometric measurements and sources of error. Flame photometry, including emission and atomic absorption spectral determinaton of the composition and stabilities of organic species in aqueous and nonaqueous solvents Tanabe-Sugano diagrams.
Professors Fresco and Cave

COMPUTER SCIENCE (308)

Professors — G. MARSAGLIA, *(Director, School of Computer Science);* W.D. THORPE
Associate Professors — T.H. MERRETT; M.M. NEWBORN; C.C. PAIGE; G.F.G. RATZER
Assistant Professors — K. ANANTHANARAYANAN; D.J. BURRAGE; N. MAROVAC; R.A. RECKHOW; G.T. TOUSSAINT
Lecturers — M COHEN; R. GOVINDARAJAN; A. GREENBERG

Burnside Hall. Second floor.
Departmental office. (undergraduate activities), Room 229 Telephone: 392-8275.

Computer Science is a subject with both practical and theoretical importance. It has strong links with many other disciplines, particularly with mathematics in the field of numerical analysis, with electrical engineering in the field of computer hardware and with management in the field of large scale data processing systems.

The courses offered are designed to satisfy the different needs of students ranging from those who will be involved in computer applications in their own area of specialization to those who wish to specialize in Computer Science (perhaps with a view to proceeding to graduate school). Some graduate courses in Computer Science are available to suitably qualified senior undergraduates. For further information, see the Faculty of Graduate Studies and Research Announcement.

McGill possesses two powerful computers, providing both a batch processing and time sharing service to the University. Every effort is made to give a student as much practical experience with the computing facilities as possible.

Although the School of Computer Science does not offer any programs in the Faculty of Science, the Mathematics Department has a major program with a Computer Science option in which Computer Science courses form an integral part. Special programs involving Computer Science are also available in the Faculty of Management and in the Department of Electrical Engineering. For further details, the Announcements of the Faculties of Management and Engineering should be consulted.

The following courses are introductory and not more than one of them may be taken for credit:

308-100 Restricted to Arts students
308-200 Primarily for students of Mathematics Physics, Chemistry
308-220 Primarily for students of Biology, Psychology and Social Sciences.

Continuation to other computer science courses is possible only from 308-200.

COURSE DESCRIPTIONS

308-100A,B INTRODUCTION TO COMPUTING. (3 credits; No scheduled lectures; No prerequisites). An introduction to applications and general concepts of computing; introduction to program-

ming using a selection of features of the programming language FORTRAN. The course consists of modules, containing video tape lectures, module booklets, interactive terminal sessions and assignments to be run on the computer. The student learns at his own pace. The only formal lecture is held the first day of a new semester. This course is intended for Arts students.
Staff

308-200A,B INTRODUCTION TO COMPUTER SCIENCE. (3 credits; 2 hours; Prerequisite: 189-121A,B or equivalent). Number systems; data representation; algorithm design; FORTRAN; computer methods including searching, sorting, solution of equations, numerical integration and matrix manipulation. This course is designed for students in mathematics and the physical sciences.
Staff

308-210A,B COMPUTER STRUCTURE AND ASSEMBLY LANGUAGE. (3 credits; 2 hours; Prerequisite: 308-200A,B). Computer structure, machine instruction execution, addressing techniques, and digital representation of data. Coding and assembly systems, macro definition, program segmentation and linkage.
Professor Ratzer

308-220A,B DIGITAL COMPUTING FOR STATISTICAL ANALYSIS. (3 credits; 3 hours; Prerequisite: 166-350A, 189-231A or 204-204A). The course introduces the student to computers and to their uses in the solution of statistical problems. Numbers systems, data representation, characteristics of a high-level programming language (FORTRAN), methods of computer solution of statistical problems, random numbers, games of chance, simulation.
Staff

308-230A,B COMPUTERS IN DATA PROCESSING. (3 credits; 2 hours, Prerequisite: 308-200A,B or equivalent programming experience). Uses of computers for data processing; COBOL; job control language; system utility programs including sort/merge; file processing; comparison of languages in business-oriented applications.
Professor Burrage

308-300A,B PROGRAMMING LANGUAGES. (3 credits; 2 hours; Prerequisite: 308-210A,B). A study of scientific programming languages including PL/1, APL and GPSS. Introduction to theory of compilers and interpreters. Computer solution of non-numerical problems.
Professor Thorpe

308-305A COMPUTER SYSTEM ARCHITECTURE. (3 credits; 3 hours; Prerequisite: 308-210A,B). A functional description of computer hardware. Hardware concepts and current technology. Memories, buffers, memory hierarchies and dynamic address translation. CPU design criteria, performance factors, overlap, parallel and pipeline systems. Microprogramming. Interrupt mechanism and clocks. Channels, control units, input devices including telecommunication equipment.
A. Greenberg

308-310B. COMPUTER SYSTEMS AND ORGANIZATION. (3 credits; 2 hours; Prerequisite: 308-305A,B). Control and scheduling of large information processing systems. Operating system software — resource alocation, dispatching, processors, access methods, job control languages, main storage management. Batch processing, multiprogramming, multiprocessing, time sharing.
Professor Valenti

308-315A INFORMATION STRUCTURES. (3 credits; 2 hours; Prerequisite: 308-210A,B; *Students with a high grade in 308-200 may be permitted).* This course introduces the concepts of data storage and develops competence in data manipulation. The student is expected to write and run his own programs, mainly in FORTRAN. The course discusses the basic types of data structures, their theoretical properties and some of their applications. Contents: storage of arrays, applications to special matrices and scientific computation; queues and stacks, applications to compiler writing; sorting and searching; introduction to list processing and symbolic manipulation.
Professor Ananthanarayanan

308-320B FILES AND DATA BASES. (3 credits; 2 hours; Prerequisites: 308-230A,B and 308-315A). PL/1 language essentials; data sets, files and job control language; sequential files; printing, sorting, updating, indexed sequential files; direct files; files of structured data; data bases.
Professor Merrett

308-415B PROGRAMMING LANGUAGE STRUCTURE AND COMPILERS. (3 credits; 3 hours; Prerequisites: 308-210A,B and 308-315A; recommended 308-300A,B). An introduction to the structure of programming languages and techniques of compilation. A study of various programming languages and ther structures from the point of view of implementation. An introduction to compilers and compiler writing. The student is expected to acquaint himself with the languages discussed and with compilation techniques by writing and running programs and compiler segments.
Professor Reckhow

308-425B HEURISTIC PROGRAMMING. (3 credits; 3 hours; Prerequisite: 308-315A). This course introduces heuristic as opposed to algorithmic concepts in problem solving, pattern recognition, learning and adaptation. The student is expected to write and run programs in the above areas.

Contents: Game trees; programs that play games; heuristic search procedures; programs that solve problems; learning programs; adaptive programs; question answering programs; pattern recognizing programs.
Professor Toussaint

308-520A DATABASE SYSTEMS. (3 credits; 3 hours; Prerequisite: permission of instructor. recommended: 189-318, 308-320). An introduction to abstract data structure and to techniques of database implementation. Topics: review of sentential and predicate logic, relational view of data, relational calculus, relational algebra, normalization; hierarchical and network views of data, implementation techniques, existing database systems (chosen from: ADABAS, DBTG, IMS, S2000, TOTAL); data security and integrity.
Professor Merrett

*CRYSTALLOGRAPHY (186)**

Frank Dawson Adams Building, Room 337, Telephone: 392-5840.

Most solids, from the minerals of the earth and the moon to the proteins and other macromolecular biological materials, have a structure that is characterized by a regular triperiodic arrangement of atoms and molecules; they are crystalline. Crystallography concerns itself with the determination of these interatomic arrangements and their imperfections as well as with the study of the resulting chemical and physical properties of crystalline matter.

Crystallographers find their problems in fields as diverse as mineralogy, crystal physics, molecular biology, solid state chemistry, materials science, group theory, etc. The student's preparation should therefore be as sound and broad as possible in the fundamentals of science. In the Honours and Major programs, which are administered by the Department of Geological Sciences, a student takes more chemistry than the physics student, and more physics and mathematics than the chemistry student. In addition, the student at the undergraduate level will be taught morphological and structural crystallography, symmetry, crystal chemistry, the techniques of X-ray diffraction, and optical crystallography.

Students successfully completing the crystallography program may proceed to graduate studies in crystallography, where they may specialize in the physical, the chemical, or the biological aspects of the subject. This training will prepare crystallographers for careers in basic research and teaching or in industry.

**Crystallography is a part of the Department of Geological Sciences.*

MAJOR IN CRYSTALLOGRAPHY

First year: Geology 186-210B and 211A; Chemistry 180-213A,B or -212A,B; Mathematics 189-222A,B, -223A; Physics 198-219A and -251A or -231A,B. (9 additional credits.)

Second year: Geology 186-313A and 312B; Mathematics 189-314A,B; Chemistry 180-281A,B; Physics 198-346D; Computing Science 308-200A. (9 additional credits.)

Third year: Geology 186-503D, 504B; Mathematics 189-315A,B; Physics 198-434B, -438B; Chemistry 180-381A. (10 additional credits.)

HONOURS IN CRYSTALLOGRAPHY

Honours students will take the same courses required for Major students and will be given 18 credits of additional course requirements, in closely related disciplines, after consultation with their adviser. One additional requirement will be the writing of a report on a research project carried out in 186-503D. They must maintain a 2.8 minimum GPA.

COURSE DESCRIPTIONS

186-211A CRYSTALLOGRAPHY. (3 credits; 2 hours lectures, 3 hours laboratory). Lattices, crystal systems, point groups, space groups, crystal morphology (stereographic projection, Wulff net), twinning, X-ray diffraction applied to powders and single crystals (rotation, Weissenberg, precession). Fourier summations (electron density and Patterson), approaches to crystal-structure determination.
Dr. Le Page

186-501B CRYSTAL CHEMISTRY. (3 credits; 2 hours lectures, 1 hour seminar; Prerequisite: Geology 186-211A, 180-213A,B). Discussion of crystal structures of important mineral groups, especially oxides, sulphides and silicates. Solid solution. Relation of structure to morphology and to chemical and physical properties of crystalline matter. (Not given 1976-77.) (Not open to students who have taken 186-213A or 186-313A).
Professor Donnay

186-502B CRYSTAL-STRUCTURE ANALYSIS. (2 credits; 2 lectures). Not given 1976-77. Elements of crystallography and diffraction physics basic to structure determination. Choice of crystal; principles underlying photographic and counter methods of collecting intensity-data. Data reduction. F^2 synthesis. The phase problem. Trial and error methods, heavy-atom techniques, direct methods. Electron density calculation. Refinement of structure. (Not given 1976-77.)
Professor Donnay

186-503D CRYSTAL-STRUCTURE DETERMINATION. (6 credits; 6 hours laboratory; Prerequisite: 186-211A, or 502B). Techniques of structure determination applied to a research problem. (Not open to students who have taken 186-493D).
Dr. Le Page

186-504B CRYSTAL SYMMETRY. (2 credits; 2 lectures). Not given 1976-77. Derivation of the 32 crystallographic point groups (the geometric crystal classes), 14 translation groups (the Bravais lattices), 73 arithmetic crystal classes (isomorphic with symmorphic space groups) and 230 space groups. Atomic site symmetry vs. crystal-structure symmetry. Effect of solid solutions on crystal symmetry. Symmetry information to be gained from X-ray dif-

fraction: powder diagrams vs. single-crystal patterns. Generalized symmetry applied to twinning and magnetic structures. (Not given 1976-77.)
Professor Donnay

EXPERIMENTAL MEDICINE (516)

516-502D ADVANCED ENDOCRINOLOGY. (6 credits). This course is designed for U-3 students who are in the major or honours program in biology, physiology, anatomy or biochemistry and for graduate students. During the Fall term the material covered deals with neuroendocrinology, the pituitary hormones, adrenal, ovarian and testicular hormones and control of intermediary metabolism which deals with insulin and growth hormones. The emphasis is on physiology, biochemistry and control mechanisms. During the second term the subjects covered are thyroid, hormones and development, pregnancy, catecholamines, calcium metabolism prostaglandins, hormones and Ca.
Professor Solomon

516-512A PHYSICAL METHODS IN BIOLOGICAL RESEARCH. (3 credits; Prerequisites: first year calculus and physics, Physiology 311D and/or permission of the instructor). Theoretical and practical treatment of biomedical instrumentation in research (user oriented). Electrical theory, transducers, frequency response, amplifiers, stability and noise, integrators and differentiators, computerized data acquisition.
Professors Murphy and Ross

GEOGRAPHY (183)

Professors: — J. BRIAN BIRD; B.J. GARNIER *(Chairman);* T.L. HILLS; J.T. PARRY.
Associate Professors: — W. ARMSTRONG; M.A. CARSON; R.N. DRUMMOND *(on leave 1st term 1976/77);* P.G. HOLLAND; J.O. LUNDGREN; B.H. MASSAM *(on leave 1st term 1976/77);* S.H. OLSON; E. WADDELL; R.C. ZIMMERMANN *(on leave 1976/77)*
Assistant Professors: — J.J. DRAKE; G.O. EWING *(on leave 1976/77);* W.B. KEMP; J.E. LEWIS; T.R. MOORE; L. VEILLEUX *(part-time)*
Honorary Professor — F.B. MULLER
Director — Subarctic Research Laboratory — F.H. NICHOLSON *(Assistant Professor)*

Burnside Hall, Department Chairman, Room 510, Telephone: 392-5700.

General inquiries at Departmental Office, Room 513, Telephone: 392-5700.

Geography is a discipline which bridges the gap between Science and Arts subjects. Its central theme is the study of man and the processes which affect him in his physical and social environments. Both a specialist and an interdisciplinary approach are open to students, who, while taking several courses in common, may proceed towards either the B.Sc. or B.A. degrees.

The challenges facing students in geography and the areas for investigation are wide ranging. Current projects involving undergraduate students include:

A mathematical analysis of air travel in Canada.
Land use, soils and water quality in Quebec.
Weather and human comfort in Montreal.
Social and economic utilization of Arctic resources.
Location of health and welfare facilities for urban planning.
Tourism and recreational land use in developed and developing countries.

Graduates have found career opportunities in accordance with their level of specialization and interests. Many segments of industry, and all levels of education and government employ geographically trained students. The Federal Departments of Environment, Energy, Mines and Resources, Urban Affairs, External Affairs, Regional Economic Expansion, and those dealing with Parks, Native Peoples and Land Use have areas where geographers may find applications for their skills. Some jobs are in the remote or wilderness areas of various countries, but others are in the offices and laboratories of large urban centres and in quiet rural countrysides. Within these careers, specialization may be very diverse, and include climatology, regional and city planning, industrial location, air photo interpretation or map analysis, and cultural and biological problems in regional development.

The interaction of man with various aspects of his environment is seen in the emphasis given to the interaction throughout many of the courses and programs offered in the department. Some courses, however, focus on a range of local, regional and world problems, such as air and water quality, or food/population and economic development relationships. In others the emphasis is on the study of physical, economic and cultural processes in a geographical framework. Other courses centre upon methods of geographical analysis.

Courses in the Geography Department are informally organized into sequences such as the following:

World Problems: 183-110A, -112B, -346B
Urban: 183-216A, -217B, -314A, -316A, -331A, -412B
Economic: 183-311B, -313A, -315B, -319A, -410D, -411A
Cultural-Ecological: 183-214A, -215B, -300B, -304B, -317A, -403B, -414A.
Physical Geography: 183-113B, -203D, -325A, -499F
Geomorphology: 183-271A, -272B, -453B
Hydrology: 183-322A, -327B
Climatology: 183-321A, -324B, -422A, -423B
Biogeography and Soils: 183-302D, -305A, -307B, -451D
Regional: 183-303D, -309A, -310A, -326B, -401A
Technical: 183-201B, -202B, -306A, -308B, -333A, -351A, -482D, -484D

(Cartography, Air Photo, Statistical Analysis, Research Methods)

Combinations of these sequences may be followed leading to either B.A. Honours and Major in Geography (see Arts section) or B.Sc. Faculty Programs, Honours and Major in Geography as described below.

FACULTY PROGRAMS

For details see Faculty Programs, page 131.

There are no specific prerequisites to these faculty programs; courses that should be taken in U1 are marked with an asterisk. Any deficiencies in background should be taken concurrently as one of the optional selections.

Adviser: Professor M.A. Carson, Room 618, Burnside Hall, Telephone: 392-8245.

MAJOR IN GEOGRAPHY

Students are required to take a minimum of 42 credits in Geography and 12 credits in other approved courses in Geology, Meteorology, or Biology.

Adviser: Professor M.A. Carson, Room 618, Burnside Hall, 392-8245.

First year: Geography 183-201B, -202B, -203D, and 6 credits in Arts Geography.

Second year: Geography 183-271A and -272B, -351A.

Third year: Geography 183-321A, -451D and -306B or -308A.

HONOURS IN GEOGRAPHY

Adviser: Professor M.A. Carson, Room 618, Burnside Hall, 392-8245.

All Honours students take a basic group of courses in Geography. In addition they may take a comprehensive program in Physical Geography, or choose an area of specialization. At present, specialized options are offered in Biogeography, Climatology and Geomorphology.

All four B.Sc. Honours programs involve completion of 60 credits of approved geography courses (including a 6-credit research course), 9 optional non-geography credits from a list of approved courses in ancillary fields, and a balance (of 21 credits) of electives. The following lists specify those courses which are compulsory in these programs. *A detailed description of each program, with all approved courses, is available from the departmental office, Room 513, Burnside Hall.*

Core Courses

(a) PHYSICAL GEOGRAPHY

Geography 201B, 202B, 203D, 271A (or 272B), 302D, 305A, 306A (or 308B), 321A, 322A, 325A, 351B, 484D

(b) SPECIALIZED OPTIONS IN BIOGEOGRAPHY, CLIMATOLOGY AND GEOMORPHOLOGY

Geography 201B, 202B, 203D, 271A (or 272B), 306A (or 308B), 321A, 351B, 451D, 484D

PREREQUISITES

There are no prerequisites in geography for entrance to the Major or Honours B.A. or B.Sc. in Geography. Arts students should include six credits of mathematics in their CEGEP or pre-university programs. Students who have completed college or pre-university geography courses fully equivalent to those at first year university may substitute other approved courses as part of their Major or Honours programs.

INTRODUCTORY COURSES

Students intending to continue in physical geography should enrol in Geography 183-203D. Those students who have not taken physical geography or earth sciences at the College level, and those students who do not intend to continue further in physical geography are recommended to take Geography 183-113B (a treatment of physical geography at the global scale).

Students seeking an overview of world geographic problems, and not necessarily wishing to continue in geography, are recommended to take Geography 183-110A, 112B and/or 113B.

COURSE DESCRIPTIONS

183-110A GEOGRAPHICAL PERSPECTIVES ON WORLD ENVIRONMENTAL PROBLEMS. (3 credits; 2 hours and conference). Introduction to geography as nature and man in a spatial context. An integrated approach to environmental systems and the human organisation of them from the viewpoint of spatial relationships and processes. Special attention to major world problems, for example: the expanding Sahara, the disappearance of tropical forests, food shortages, North American water shortages, demands on energy resources, and the development of Arctic resources. (Not open to students who have taken 183-111D).

Professors Bird and Hills

183-112B GEOGRAPHY OF CONTEMPORARY WORLD PROBLEMS. (3 credits; 2 hours and conference). Geographic perspectives on major contemporary world problems with an emphasis upon cultural-political background. A consideration of the world's increasingly adverse population-resource ratio, environmental deterioration, problems of energy supply, uncontrolled urbanisation and the increasing disparity between the developed and the developing realms. (Not open to students who have taken 183-111D).

Professors Hills and Armstrong

183-113B AN INTRODUCTION TO PHYSICAL GEOGRAPHY. (3 credits; 2 hours and laboratory). An introductory description and explanation of the physical processes and properties of the earth's atmospheric systems and the continents of the earth. Energy at work in the atmosphere and oceans and at the surface, and the resulting world pattern of

physical environments; the interrelationships of natural phenomena within these environments. (Not open to students who have taken 183-111D).
Professor Bird

183-201A,B INTRODUCTION TO CARTOGRAPHY AND AIR-PHOTO INTERPRETATION. (3 credits; 1 hour plus laboratory periods). The basic principles and technical skills used in cartography and the interpretation of air photos for the presentation and analysis of spatially distributed data. Thematic maps and the communication of ideas in map form.
Professor Drummond

183-202B INTRODUCTION TO GEOGRAPHICAL ANALYSIS. (3 credits; 2 hours and conference). An introduction to the application of statistical techniques to the description, analysis and presentation of spatially distributed data.
Professor Massam

183-203D AN INTRODUCTION TO ENVIRONMENTAL STUDIES. (6 credits; 2 hours and conference). Geographical problems and themes in environmental studies. The major environmental processes and the interaction between the components (the atmosphere, lithosphere and biosphere). Examination of Man's impact on the environment, and its consequences.
Professors Moore and Drake

183-214A CULTURAL GEOGRAPHY I. (3 credits; 2 hours and conference; Prerequisite: A first year course in Geography or Earth Science or -203D). Relationships between environment, technology and society: the concept of a man-environment (or ecological) system. Identification of the principal stages and processes of cultural evolution.
Professor Waddell

183-215B CULTURAL GEOGRAPHY II. (3 credits. Prerequisite: Geography -214A). Urban cultural phenomena in the "Third World". Topics for 1976-77; urban demography of developing countries, migration, polyethnic cities, their geopolitics and communications systems.
Professors Olson and Waddell

183-216A GEOGRAPHY OF LOCATION. (3 credits; 2 hours and conference). Introduction to the geographic organization of economies. Examination of the basic theoretical principles that explain the spatial organization of agriculture, industry and cities.
Professor

183-217B INTRODUCTION TO URBAN GEOGRAPHY. (3 credits; 3 hours; Prerequisite: An introductory geography course at the college level or equivalent). The internal spatial structure of the city and related processes are analysed in terms of land uses, population density, social and economic characteristics of the population, travel patterns and household migration. Trends in urbanisation and urban growth in Quebec and Ontario are examined.
Professor Olson

183-236A INDIGENOUS PEOPLE OF NORTH AMERICA. (3 credits; this is a linked course with Anthropology 151-236B). A survey of North American Indians and Inuit cultures from an ecological and ethnographic perspective. Discussion of adaptations to the North American environment from earliest origins and an analysis of the traditional patterns of life and of the process of cultural change occurring within selected environmental zones.
Professor Kemp

183-271A TERRAIN ANALYSIS I. (3 credits; 2 hours and conference/laboratory; Prerequisite: A course in physical geography or equivalent). A systematic treatment of the geomorphology of areas of folding, faulting, intrusion and vulcanism and their response to weathering and erosion.
Professors Bird and Parry

183-272B TERRAIN ANALYSIS II. (3 credits; 2 hours and conference/laboratory; Prerequisite: A course in physical geography or equivalent). A systematic treatment of the geomorphology of areas dominated by gradational processes: glacial and periglacial, fluvial and mass-wasting, coastal and marine, aeolian and arid.
Professor Parry

183-300B GEOGRAPHICAL ASPECTS OF CULTURAL ADAPTATION. (3 credits; 2 hours and conference; Prerequisite: Geography 214A or permission of the instructor). Study of the dynamic processes that structure the relationship between man, culture and environment. The role of energy and information for adaptive processes will be analysed within the context of urban and non-urban societies. Specific attention will focus on the ecological aspects of human nutrition and environmental health.
Professor Kemp

183-302D ENVIRONMENT: ECOSYSTEMS AND MAN. (6 credits; 3 hours
Prerequisite: Geography 203D or Biology 111A or permission of instructor. Field work is emphasized). An ecological analysis of the physical and biotic components of the environment, with emphasis on the scientific, technological, institutional and other aspects of environmental degradation and restoration. Practical resource management in collaboration with local government and industry.
Professor Moore and Staff

183-303D THE SOVIET UNION AND EASTERN EUROPE. (6 credits; Prerequisite: Geography 214A or 216A. Geography 203D will be accepted in the case of Science students continuing in Geography). *Not given in 1976-77.* Position; general physical characteristics. The territorial development of Russia. Ethnic groups. Migration and settlement. Population distribution. Land use, agriculture, mining,

and other industries including recent developments. Social significance of economic life. Urbanization. The administrative structure of the Soviet State and of Eastern European nations.
Professor

183-304B HUMID TROPICAL ENVIRONMENT. (3 credits; 2 hours and conference; Prerequisite: Geography 214A, Geography 203D is also recommended. Geography 304B will be offered every second year). A consideration of the geographically significant cultural, physical and biological characteristics of the humid tropics. Major ecosystems of the region will be delimited and selected rain forest and savanna ecosystems will be analysed in depth.
Professor Hills

183-305A THE GEOGRAPHY OF SOILS. (3 credits; 2 hours and laboratory; Prerequisite: An introductory course in physical geography or geology or biology). Discussion of main properties of soils; principles of soil formation and classification; major soil types of the world; soil survey techniques.
Professor Moore

183-306B ADVANCED CARTOGRAPHY. (3 credits; 1 hour and laboratory periods; Prerequisite: Geography 201B or permission of instructor). Analysis and interpretation of thematic and topographic maps. Their application to selected problems in physical and cultural geography, design and compilation of maps for geographic communication, map reproduction and computer mapping.
Professor Drummond

183-307B SOILS AND LAND UTILIZATION. (3 credits; 2 hours and conference/laboratory; Prerequisite: Geography 305A or permission of instructor). Principles of land utilization and crop growth; case studies of the influence of soils on land use in selected environments.
Professor Moore

183-308A AIR PHOTO INTERPRETATION AND REMOTE SENSING. (3 credits; 1 hour and laboratory periods; Prerequisite: Geography 201A, or permission of instructor). The principles of air photo interpretation and remote sensing of the environment, applications to urban problems, geomorphology, land use and inventory of natural resources. Elementary photogrammetry and field work.
Professor Parry

183-309A. CANADA: ITS GEOGRAPHIC FOUNDATIONS. (3 credits; 2 hours and conference). An introduction to the geography of Canada. A comprehensive geographical interpretation of Canada's salient physical and human characteristics, including landscapes and their evolution, climate, vegetation, man/land relationships and socio-economic attributes of the population. (not open to students who have taken 183-301D).
Professor Bird and Staff

183-310B GEOGRAPHY OF THE CARIBBEAN. (3 credits; 2 hours and conference). The nature, perception and management of Caribbean resources will be described and analysed from the point of view of historical factors, cultural diversity, and political organization. Models of economic development and attempts at regional organization will be considered.
Professor Hills

183-311B GEOGRAPHIC ATTRIBUTES OF THE CANADIAN ECONOMY. (3 credits; 2 hours and conference). Prerequisite: Course 183-309A, or an introductory geography course, or permission of instructor). A geographic interpretation of the Canadian growth experience. The evolution of Canadian economic regionalism considered in relation to natural resources, agriculture, urbanism and industrialization. Some effects of the American participation in the Canadian economy. Regional disparities and contemporary urban problems. (Not open to students who have taken 183-301D).
Professor

183-312A THE GEOGRAPHY OF CHINA. (3 credits; 2 hours and conference). A general overview of the Chinese landscape. Special topics will focus on the distribution and growth of population, the remodelling of agricultural organization since 1949, changes in the industrial sector and spatial pattern of industry, and transportation networks.
Professor Veilleux

183-313A GEOGRAPHY OF RECREATION. (3 credits; Prerequisite: Introductory course in either human or physical geography or permission of instructor). The development of the phenomenon of modern recreation and its geographic characteristics. Outdoor recreation in different forms, with special attention to changing land requirements, both on urban and regional scale levels, including the development of park systems; structure and distribution of the recreation service industry and selected institutional recreational systems. Emphasis will be given to the greater Montreal region through field work-oriented term assignments.
Professor Lundgren

183-314A INTERMEDIATE URBAN GEOGRAPHY. (3 credits; Prerequisite: Geography 183-216A or 217B or permission of instructor). A review of selected topics relating to urban policy making, social justice; provision of public goods; public finance; infrastructure planning and impact studies. An examination of spatial interaction analysis, including gravity and space preference models of passenger and commodity flows, shopping trips and migration flows; planning applications. An introduction to urban environmental perception.
Professor Wolforth

183-315B GEOGRAPHY OF TOURISM. (3 credits; Prerequisite: Introductory course in either human or physical geography or permission of instructor). Geographic characteristics of tourist travelling,

including changing tourist attractions, touristic mobility, tourist travel components and, the modern integrated tourist travel system; tourism and regional economic development, especially in Third World economics.
Professor Lundgren

183-316B CONTEMPORARY POLITICAL GEOGRAPHY. (3 credits; 2 hours and conference; Prerequisite: Geography 183-202B or permission of instructor). The study of the spatial dimensions of political activities at the local and national levels: the principles of urban government reforms.
Professor

183-317B THEMES IN TROPICAL REGIONAL GEOGRAPHY. (3 credits; Prerequisite: Geography 214A). Several geographic themes are considered in the context of a selected region: nature of responses to population pressure on resources, regional trading (ancient and modern), cultural constraints in the modernization of the traditional economies, rural-urban migration and urbanization.
Professor Armstrong

183-318B SPATIAL ANALYSIS OF MANUFACTURING. (3 credits; 2 hours and conference; Prerequisites: Geography 216A; or by permission of instructor). Geographic analysis of manufacturing industry with emphasis on spatial concentration in manufacturing and the problem of generating industrial growth in disadvantaged areas.
Professor

183-319A GEOGRAPHY OF ECONOMIC DEVELOPMENT. (3 credits; Prerequisite: Geography 214A, 216A or 217B or by permission of instructor). Analysis of the role of geography in the field of economic development; growth and development theories on different geographic scale levels; behaviour of selected economic activities in change process; regional economic development in relation to changing resource utilization; development planning.
Professor Lundgren

183-321A CLIMATIC ENVIRONMENTS. (3 credits; Prerequisite: Geography 203D or Meteorology 210D or instructor's permission). Scope of climatology, physical, dynamic and applied. The earth/atmosphere system, radiation and energy balances, governing meteorological processes. Movement and circulation of the atmosphere on a local and global scale. Resulting weather systems.
Professors Garnier and Lewis

183-322A HYDROLOGY (3 credits; 2 hours and laboratory/conference; Prerequisites: Geography 203D or equivalent). Quantitative, experimental study of the principles governing the movement of water at or near the earth's surface.
Professor Drake

183-324B BIOCLIMATOLOGY. 3 credits; Prerequisite: Geography 203D or Meteorology 210D or permission of instructor). Climatic classification and weather systems. Influence of climate on plants, animals, and man. Water balance and its application in agriculture and water resource analysis. Principles of physiological climatology; calculation of wind chill, effective temperature, and comfort-indices. Application of physiological climatology to human affairs, e.g. health, urban planning, and house design.
Professor Lewis

183-325A PHYSICAL GEOGRAPHY OF QUEBEC. (3 credits). An account of the development of the present natural environment of Quebec with particular attention to changes following the retreat of the Laurentide Ice Sheet. Discussion of contemporary processes, resources and problems will provide a background for Geography 326B. Field work.
Professor Carson

183-326B HUMAN GEOGRAPHY OF QUEBEC. (3 credits; 2 hours and conference). A geographical interpretation of selected social, economic and political problems of contemporary Quebec; ethnicity, demography, urbanization, regional disparities, economic marginality, with the purpose of segregating elements unique to Quebec from the more universal aspects that pervade them.
Professor Waddell

183-327B WATER RESOURCES AND LAND USE. (3 credits; 2 hours and laboratory; Prerequisite: Geography 203D or 322A or permission of instructor). An introduction to the applications of the principles of hydrology to the development and management of water resources; the constraints imposed by natural systems on man's activities in rural and urban environments and the economic costs and benefits of modifying these constraints.
Professor Drake

183-331A URBAN SOCIAL GEOGRAPHY. (3 credits; Prerequisite: Geography 214A or 216A or permission of instructor). Social space and social time. The reflection of social structure in the spatial organization of the city. Historical perspective on changing personal mobility, life cycle, family structure and work organization. The appropriation and alienation of urban spaces.
Professor Olson

183-333A MONTREAL URBAN FIELD STUDIES. (3 credits; Prerequisite: An introductory geography course or permission of instructor). Encounters with social and physical environments of Montreal. A phenomenology of the city. This course has a modular organization with weekly individual field exploration by class members.
Professor Olson

183-346B GEOGRAPHICAL BACKGROUND OF INTERNATIONAL RELATIONS. (3 credits; 2 hours plus conference; Prerequisite: A university level geography course and permission of the instructor. *Not given 1976-77).* The principles and practice of political geography at the world and

international level. Geographical factors and relationships influencing political events and decision making.
Professor

183-351A GEOGRAPHICAL ANALYSIS AND QUANTITATIVE METHODS. (3 credits; 3 hours; Prerequisite: Geography 202B or permission of instructor). Basic conditional probability theory, urn schemes, occupancy problems, theoretical probability distributions, sampling theory and univariate statistical inference, multiple regression and one- and two-way analysis of variance.
Professor Holland

183-401A GEOGRAPHY OF NORTHERN LANDS. (3 credits; Prerequisite: An introductory geography course or 151-236B and 183-236A or permission of instructor). An introduction to the far northern lands and seas, their resources, peoples, economies and future development. Commencing with the history of Arctic exploration and study of northern ecology, the course concludes with discussion of contemporary activities in northern Canada, Greenland, Scandinavia, the U.S.S.R. and Alaska. (Not open to students who have taken 183-402D).
Professor Bird and Staff

183-403B NORTHERN CULTURAL SYSTEMS. (3 credits; Prerequisite: 336D or 401A or permission of instructor). An analysis of the evolution and present pattern of Inuit adaptation. Problems of northern development and cultural change are viewed from an ecological and cross-cultural perspective. Man/environment relationships will be modelled and the processes associated with maintaining and changing these relationships will be analyzed. (Not open to students who have taken 183-402D).
Professor Kemp

183-410D THE GEOGRAPHY OF UNDERDEVELOPMENT. (6 credits, Prerequisite: Geography 214A; Corequisites: Geography 310A and/or -312A and/or -318B). An examination of the concept of underdevelopment from the viewpoint of geography. In this, the cultural, political and economic mechanisms and manifestations of underdevelopment and the responses to it, will be considered in different areas of the world. The two major sections of the course will centre on: A) A study of the rise of industrial capitalism, its historical evolution and spread geographically in the past two centuries with special reference to the past thirty years. This will serve as an introduction to: B) A consideration of underdevelopment, its position within the dominant world economic system, and an analysis of its functioning in socio-cultural and geopolitical terms.
Professor Armstrong

183-411B GEOGRAPHY OF INTERNATIONAL TRADE. (3 credits; Prerequisite: Geography 216A or permission of instructor). Geographic patterns of international trade, regional resource base and trade generation. Trade systems. The foreland-hinterland concept, commodity innovation, geographic diffusion and range.
Professor Lundgren

183-412B ADVANCED URBAN GEOGRAPHY. (3 credits; 2 hours and conference; Prerequisites: Geography 216A and 351A or permission of instructor). Strategies for solving location-allocation problems; on planes and networks; static and dynamic models; applications to selected urban problems. The application of computerized algorithms in solving these problems is stressed.
Professors Massam and Wolforth

183-414A TROPICAL AGRICULTURAL SYSTEMS. (3 credits; 2 hours and conference; Prerequisites: Geography 214A and preferably 215B or by permission of instructor). Three major tropical agricultural systems — shifting, permanent and irrigation — are analysed in ecological terms. Attention is focused particularly on the dynamics of such systems — of changes effected in response to demographic growth and economic diversification particularly — using primarily southeast Asian and Melanesian materials.
Professor Waddell

183-422A THE URBAN CLIMATIC ENVIRONMENT. (3 credits; Prerequisite: Geography 203D or permission of instructor). Examination of components of the urban radiation-energy budget and its direct corollaries — the urban temperature and wind fields. Air pollution is considered as a man-made perturbation affecting the natural conditions of the atmosphere. Methods of energy balance and air pollution diffusion modelling. Land-use planning in association with climatic and pollution effects. Implications of building climatology.
Professor Lewis

183-423B MICROCLIMATOLOGY. (3 credits; Prerequisite: Geography 321A or Meteorology 210D). A detailed examination of energy and mass exchange at/or near the earth's surface, emphasizing radiative, heat, moisture and momentum transfers. Methods of measurement based on energy balance, water balance, and turbulent transport theory. Models of potential and actual evaporation and their use in predicting soil moisture and plant productivity. Examples drawn from natural, agricultural, and urban environments.
Professors Lewis and Garnier

183-451D BIOGEOGRAPHY. (6 credits; Prerequisite: Geography 203D or 302D or permission of instructor, for students in continuation or honours biological science). Study of life according to its environmental and spatial relationships with emphasis on plants. The interaction, geographical distribution, domestication and economic utility of biota in the regional setting.
Professor Holland

183-453B APPLIED GEOMORPHOLOGY. (3 credits; 2 hours lecture and laboratory, Prerequisite: a previous course in geomorphology or permission of instructor). An examination of the role of the geomorphologist in the solution of environmental problems, the planning of environmental changes, and the detection and utilization of environmental resources.
Professor Carson

183-481B EVOLUTION OF MODERN GEOGRAPHY. (3 credits; for Honours and Joint Honours and Major students in Geography only). *Not given in 1976-77.* A review of the historical development of geography as a separate discipline and a systematic analysis of the main branches of modern geography with emphasis on the theoretical and methodological developments during the last fifty years.
Staff

183-482D RESEARCH AND READING COURSE IN GEOGRAPHY. (6 credits; for final year B.A. Honours or Joint Honours in Geography only). An advanced course designed to familiarize the student with contemporary research and writing in the various aspects of geography. An essay or undergraduate thesis will be required to complete the requirements of this course.
Staff

183-484D RESEARCH AND READING COURSE IN PHYSICAL GEOGRAPHY. (6 credits; for final year B.Sc. Honours or Joint Honours in Geography only). An advanced course designed to familiarize the student with contemporary research and writing in the various aspects of physical geography. An essay or undergraduate thesis will be required to complete the requirements of the course.
Staff

183-490D INDEPENDENT STUDIES IN GEOGRAPHY. (3 credits; open to U3 Geography Major students only; Prerequisite: projects must be arranged individually with instructors before registration). Research or reading projects permitting independent study under the guidance of a staff member specializing in the field of interest.
Staff

183-499F THE PHYSICAL GEOGRAPHY OF THE SUBARCTIC: SCHEFFERVILLE FIELD CAMP. (3 credits; Prerequisite: Geography 203D or 325A). An introduction to the physical geography of the Sub-Arctic with emphasis on the applications of field methods to the description and measurement of phenomena and processes. Students will undertake projects concerned with topics such as permafrost and frozen ground phenomena. Based at the McGill Sub-Arctic Research Laboratory, Schefferville. Pre-registration required in April of U2 year for September of U3 year; contact Prof. J.J. Drake.
Professor Nicholson

Summer Session

The following courses will be given during the 1976 Summer Session. Other courses will be offered in summer of 1977.

Geography 183-319C, Geography of Economic Development; 183-321C, Climatic Environments; 183-333L, Montreal Urban Field Studies; 183-404C, Contemporary Geography.

GEOLOGICAL SCIENCES (186)

Professors — G. DONNAY *(on leave 1976-77);* J.A. ELSON; E.W. MOUNTJOY; V.A. SAULL; C.W. STEARN; J.S. STEVENSON
Associate Professors — R. DOIG *(Chairman);* P.R. EAKINS; R.H. GRICE; R. HESSE; W.H. MacLEAN; R.F. MARTIN *(on leave 1976-77);* G.R. WEBBER
AssistantProfessors — D. FRANCIS; A.J. HYNES
Research Associates — A. BECKER; J.D.H. DONNAY
Sessional Lecturer — Dr. Y. LEPAGE

Frank Dawson Adams Building,
Departmental Office Room 238,
Telephone: 392-5730

Geology is a study of the planet Earth — its composition, structure, behaviour, and history.

Although geologists must have a basic training in mathematics, physics, and chemistry, geology is a science in itself dealing with events which took place millions of years ago and involved masses of continental dimensions. Most geologists start their research in the field, collecting samples, measuring rock structures, and determining their properties with portable instruments. In the laboratory they analyse these specimens and interpret their measurements, using the sophisticated tools of modern science. The forces that molded a mountain chain, built a volcano, or drifted the continents apart cannot be duplicated by man, but the geologist can understand these events by analogy with experimental models and laboratory investigations of the compositions and strengths of the rocks of the crust of the earth. Like most sciences geology has its theoretical and practical aspects; geologists are concerned with the origin of our planet and solar system, the evolution of its surface, the nature of its interior, and the atomic structure of its minerals, as well as with the discovery of mineral deposits, the location of dam sites, and the prediction of earthquakes.

Some geoscientists specialize in the application of physics to understanding the earth's interior (geophysicists), some in investigating the composition of the earth (geochemists), still others in finding metals, oil and coal (economic geologists). Some study the rocks under the sea (marine geologists), some the history of the earth as revealed in its sedimentary rocks and fossils (stratigraphers and paleontologists), and still others study its landforms and surface materials (geomorphologists).

Entrance to the Major and Honours programs is through the Physical Sciences profile of the Quebec Collegiate curriculum or its equivalent. Although students intending to enter these programs are urged to take geology courses available in their academic preparation for coming to McGill, such courses are not essential to entrance to a Geology program. Students at McGill may study geology as part of a Faculty program, in the Major program, or in the Honours program. The Honours program in Geological Sciences is designed to prepare the student for graduate work and for a career as a professional geologist. All programs include electives so that students can emphasize an interest in one branch of the science. Students interested in geophysics should enrol in the Honours or Major program in Solid Earth Geophysics. A program in Crystallography is also administered through the Department of Geological Sciences. Both these programs are described under their own sections in this announcement.

Geologists are employed by companies exploring for minerals and fuels, by government agencies such as the Ministère des Richesses Naturelles and the Geological Survey of Canada, in research laboratories and in universities. They work in cities and in Arctic wastelands, in the laboratory and in the office, in the deserts and in the jungles of developing countries. Canada, a country dependent on vast natural resources, requires the geologist's skills for the development of the economy. A world facing crises in the supply of energy-giving fuels and metals will depend increasingly on the geologist for guidance in finding new supplies. Mankind facing progressive deterioration of his environment by its own wastes requires the knowledge of the earth scientist to maintain the quality of life. The environmental earth scientist should be a fully qualified specialist in a fundamental science, who is knowledgeable about the implications for society of environmental factors usually dealt with in other disciplines. As the frontiers of settlement advance into polar and desert regions, man must be able to predict the effects of his actions on natural processes.

The Honours and Major programs in Geology include the same "core" courses. Honours students must maintain a cumulative grade point average of 3.0, a cumulative percentage average of 72%, and are subject to certain restrictions in their choice of electives as outlined below.

FACULTY PROGRAMS

Faculty programs administered in this department include Geomorphology, Marine Geology, and Palaeobiology; for details, see page 131. Students interested in these interdisciplinary fields should consult the departmental office to obtain an adviser.

MAJOR IN GEOLOGICAL SCIENCES

Students must inquire at Room 238, Frank Dawson Adams Building, telephone 392-5730 to be assigned an adviser.

The following is a typical sequence of courses.

U1: Geology 186-210B, -211A, -233B, 234A, -242A, -312B; Chemistry 180-213A,B; Electives to make 30 credits. Students who have taken no general course in geology must take Geology 186-201A. Geology 186-231F (Field School I) at the close of the session.

U2: Geology 186-220B, -303D, -310D, -332A, -347B; Electives to make 30 credits.

U3: Geology 186-331F (Field School II) before the start of the session; Geology 186-323A, -343D, -345B, -433B, -441D; Electives to make 30 credits.

HONOURS IN GEOLOGICAL SCIENCES

The core courses are the same as those specified for the major program but honours students must maintain a cumulative grade point average of at least 3.0, a cumulative percentage average of at least 72%, and in addition choose between the two following alternatives: take 186-450B, Geology of North America (3 credits) plus another approved 400 or 500 level course (3 credits) *OR* write an undergraduate thesis (480D, 6 credits). In addition, 6 of their electives must be approved by departmental advisers.

Special arrangements may be made so that students in the Honours program who wish additional Geochemistry, Geophysics, or other interdisciplinary areas, may substitute other science courses in this program.

COURSE DESCRIPTIONS

The following courses are without prerequisite and could be taken by students in the Faculty of Arts: 186-201A, -233B, and -243B. Other courses assume as a prerequisite completion of the courses required in the Physical Sciences option of the CEGEP curriculum.

NOTE:

**Complete descriptions of Courses 186-211A, -501B, -502B, -503D, -504B may be found in the section on Crystallography, page 160.*

†Complete descriptions of courses 186-220B, -443D, -481D, may be found in the section on Solid Earth Geophysics, page 171.

186-201A INTRODUCTION TO GEOLOGY. (3 credits; 3 lectures; 1 laboratory). Earth's place in the universe, moon and planets, minerals and rocks, internal structure of the earth, volcanism and earthquakes, evolution of landscapes, mountains and continental drift.
Professor Stearn

186-210B INTRODUCTION TO MINERALOGY. (3 credits; 2 hours lecture, 3 hours laboratory; full day field trip). Mineralogy of the principal ore and rock-forming minerals.
Professor Francis

* **186-211A CRYSTALLOGRAPHY.** (3 credits).
Dr. Le Page

† **180-220B. ELEMENTARY EARTH PHYSICS.** (3 credits).

186-231F FIELD SCHOOL I. (3 credits; two-week field school in May). Geological mapping of selected areas, preparation of maps, reports from field notes, aerial photographs, etc.
Professor Hynes

186-233B. HISTORICAL GEOLOGY. (3 credits; 3 lectures or conference). Relative and absolute time scales; biostratigraphy, paleontological correlation; periods of earth history; evolution of oceans and continents through time; sea-floor spreading and plate tectonics; paleogeography, paleoclimates; major steps in the evolution of life.
Professor Hesse

186-234A. INTRODUCTORY PALEONTOLOGY. (3 credits; 2 lectures and 1 laboratory period). A survey of the fossil record. Uses of fossils in dating and correlating sedimentary rocks, determining ancient environments and in the study of evolution.
Professor Stearn

186-242A GEOMORPHOLOGY. (3 credits; 2 lectures and 1 laboratory period; one day field work in October). Weathering, mass wasting, erosional and depositional landforms produced by surface processes except glaciation (see GEOLOGY 431B); relationship of topography to lithology and structure.
Professor Elson

186-243B ENVIRONMENTAL GEOLOGY. (3 credits; 2 hours lectures, 1 conference). *Not available for credit for Major or Honours geology students.* Introduction to the relationship of geological factors to the human environment; optimum land and mineral use, natural hazards, ground water, engineering and urban geology.
Professors Eakins and Grice

186-303D STRUCTURAL GEOLOGY. (6 credits; 2 lectures and 3 hours laboratory; Prerequisite: 186-231F). Aims of structural geology, stress and strain, mechanical properties of rocks, elastic behaviour, brittle and ductile deformation, fabric analysis of deformed rocks, time relationships between deformation and metamorphism. Geotectonic theories.
Professor Hynes

186-310D INTRODUCTORY PETROLOGY. (6 credits; 2 lectures and 3 hours laboratory; Prerequisite: 186-210B). Integrated survey of igneous, sedimentary, and metamorphic rocks and processes leading to their formation. Emphasis in the laboratory on hand specimen description and classification, supplemented by thin sections.
Professors Hesse, Martin and Mountjoy

186-312B OPTICAL MINERALOGY. (3 credits; 6 hours laboratory and relevant in-lab. lectures; Corequisite: 186-210B). Optical properties of non-opaque minerals. Minerals in oil immersion mounts and in thin section are studied in the laboratory.
Professor Francis

186-323A IGNEOUS PETROLOGY. (3 credits; 2 hours lectures, 3 hours laboratory; Prerequisites: Geology 347B, 312B). Physical properties, nucleation, crystallization, differentiation and emplacement of magmas. Integrated studies on various rock suites.
Professor Martin

186-331F FIELD GEOLOGY. (3 credits; two-week field school in September; 1 lecture per week in 2nd term). Geological mapping of selected areas, including preparation of maps, sections, and reports from field notes, aerial photographs and other data.
Professor Hesse and Staff

186-332A ANALYSIS OF GEOLOGICAL DATA I. (3 credits; 3 lectures, computer laboratory and problems). Statistical analysis and computing methods applied to geological problems.
Professor Doig

186-343D SEDIMENTARY ROCKS AND STRATIGRAPHY. (6 credits; 2 lectures and 1 laboratory period; 2 full days of field work during October; Prerequisites: Geology 310D, 312B). Physical processes of sedimentation. Sedimentary structures. Modern and ancient sedimentary environments. Diagenesis and geochemistry. Sedimentary mineral deposits. Facies associations. Basin analysis. Stratigraphic correlation.
Professors Hesse and Mountjoy

186-344A ORE MINERALS. (3 credits; 2 lectures, 3 hours laboratory; Prerequisite: Geology 210B). Microscopy of ore minerals, including identification, interpretation of textures, paragenesis and classification.
Professor Stevenson

186-345B METAMORPHIC PETROLOGY. (3 credits; Prerequisites: Geology 303D, 347B). The origin, classification and petrological significance of metamorphic rocks, from the point of view of theory, experiment and field observations.
Professor Hynes

186-347B GEOCHEMISTRY OF HIGH TEMPERATURE PROCESSES. (3 credits; 3 hours lectures; Prerequisites: Geology 210B, 211A, 310D, Chemistry 213A or B). Fundamentals of phase equilibria, chemographic methods in petrology, open and closed natural systems, partition of elements among mineral phases, distribution patterns of specific elements as related to principles of crystal chemistry.
Professor Martin

186-430A GEOLOGY OF ENERGY SOURCES. (3 credits; 2 lectures and 2 hours laboratory or seminar; Corequisite: Geology 186-343D). Properties, origin, migration and occurrence of petroleum and natural gas. Canadian oil fields. Structural and stratigraphic reservoirs and their characteristics. Oil shales, coal, peat, radioactive minerals and solar energy sources.
Professor Mountjoy

186-431B GLACIAL AND PLEISTOCENE GEOLOGY. (3 credits; 2 hours lectures and 1 laboratory or lecture period; Prerequisite: Geology 186-242A or permission of the instructor). Introductory glaciology and glacial geology. The geological record of the Quaternary Era.
Professor Elson

186-433B ANALYSIS OF GEOLOGICAL DATA II. (3 credits; 3 hours lectures). Advanced methods of statistical analysis applied to geological problems.
Professor Doig

186-441D MINERAL DEPOSITS. (6 credits; 2 lectures and 1 laboratory period; Prerequisite: 186-347B). Nature, origin and mode of occurrence of deposits of metallic and of important non-metallic minerals; typical occurrences; geographical distribution.
Professor Maclean

† **186-443D SOLID EARTH GEOPHYSICS.** (6 credits).
Professors Saull, Telford, Doig, and Jensen

186-446A ENGINEERING GEOLOGY. (3 credits; 2 lectures and 2 hours laboratory or lecture period; Prerequisite: Permission of instructor). Significance of geologic factors in foundation engineering and effects of man's activities in the geologic environment. Strength of materials. Construction materials, geological problems connected with foundations, tunnels, dams, etc.
Professor Grice

186-448A APPLIED GEOCHEMISTRY. (3 credits; 2 lectures and 1 laboratory period; Prerequisite: Geology 186-347B or permission of instructor). Principles of geochemical prospecting and pertinent aspects of the geochemical behaviour of elements are studieD. A field trip and laboratory work provide practical experience.
Professor Webber

186-449B GROUNDWATER GEOLOGY. (3 credits; 2 lectures and 2 hours laboratory or lecture period; Prerequisite: Permission of instructor). Introduction to the hydrological properties of geological formations, groundwater movement, and groundwater chemistry as applied to water supply, waste disposal, and other problems.
Professor Grice

186-450B GEOLOGY OF NORTH AMERICA. (3 credits; 2 hours lectures, 3 hours laboratory; Prerequisites: 186-233B, 186-310D). Systematic consideration of the geology of the various tectonic provinces of the North American continent with emphasis on structure, stratigraphy and resources.
Professor Mountjoy and Staff

186-480D GEOLOGICAL RESEARCH PROJECT. (6 credits; Prerequisite: for Honours students in 3rd year). A written proposal outlining the studies to be undertaken must be submitted to the undergraduate Student Adviser by May 1st of the U-2 year. The proposal will be reviewed by a committee and a decision forwarded by mail. If approved the investigation will be supervised by a staff member, and the results must be presented in the form of an undergraduate thesis.
Staff

† **186-481D. GEOPHYSICAL RESEARCH PROJECT.** (6 credits).
Staff

* **186-501B. CRYSTAL CHEMISTRY.** (3 credits). *Not given in 1976-77.*
Professor Donnay

* **186-502B CRYSTAL-STRUCTURE ANALYSIS.** (2 credits). *Not given in 1976-77.*
Professor Donnay

* **186-503D CRYSTAL-STRUCTURE DETERMINATION.** (6 credits).
Dr. Le Page

* **186-504B CRYSTAL SYMMETRY.** (2 credits). *Not given in 1976-77.*
Professor Donnay

186-534D ADVANCED INVERTEBRATE PALEONTOLOGY. (6 credits; 2 lectures and 1 seminar per week). *Not given in 1976-77.* The bias of the fossil record. Relationships of the phyla. Taxonomy, classification, paleoecology, functional morphology, and evolution of fossil invertebrates.
Professor Stearn

186-535D PHOTOGEOLOGY. (5 credits; 2 lectures; 2 hours laboratory and tutorial; Prerequisites: 186-242A, 186-303D, or permission of the instructor). Interpretation of surface deposits and bedrock lithology and structure from vertical air photographs; elementary photogrammetry. (Not open to students who have taken 186-492D).
Professor Elson

186-605D MINERAL EXPLORATION AND MINING GEOLOGY. (6 credits; 2 lectures and 2 hours laboratory; Prerequisite: Permission of instructor). Methods of searching for mineral deposits; modern exploration programs; development of mineral deposits; evaluation of mineral deposits.
Professor Eakins

395-697B MARINE GEOLOGY AND GEOCHEMISTRY. (3 credits; 3 lectures; Pre- or Corequisites: Geology 343D, 347B, 348A, or by permission). An introduction with emphasis on deep sea studies.

Geophysical nature and morphology of the ocean basins. Geochemistry of pelagic deposits in relation to sea water composition. Deep sea stratigraphy and methods of correlation; the sedimentary record.
Professor d'Anglejan

The following courses are described in the *Announcement of the Faculty of Engineering:* Geological Sciences 186-221A, -232A, -440B.

GEOPHYSICS — SOLID EARTH (186)*

Solid Earth Geophysics is concerned with the gathering of quantitative information on the physical properties and processes of the solid earth, and the mathematical analysis of these data to learn the earth's state and behaviour (theoretical geophysics) or the location and nature of economically important mineral formations (applied geophysics).

Solid Earth Geophysics has connections with many disciplines, but principally with mathematics, physics, and geology, and prospective students should have aptitudes for these subjects. Some important divisions of Solid Earth Geophysics are: seismology and seismic exploration, earth tides, terrestrial heat flow, age of the earth, terrestrial magnetism and electricity, earth rotational dynamics, tectonophysics, and figure of the earth and gravity. In recent years achievements in Solid Earth Geophysics have enormously influenced both fundamental geological concepts and mineral exploration techniques, and rapid development continues.

Both Honours and Major programs provide sound introductions to the subject at their respective levels, and allow some additional specialization through electives. These programs are the particular concern of the Solid Earth Geophysics Group, comprising geophysicists of the Departments of Geological Sciences and Mining Engineering. Inquiries should be addressed to the Department of Geological Sciences.

*The Solid Earth Geophysics programs in the Faculty of Science are administered by the Department of Geological Sciences.

MAJOR IN SOLID EARTH GEOPHYSICS

U1: Physics 198-231A,B, -232A,B, -235B; Mathematics 189-222A,B, -223A (or -245A,B), -315A,B; Geology 186-210B, -231F (Field school, at close of session); 6 credits elective.

U2: Physics 198-328A,B; Mathematics 189-319A,B; Geology 186-220B, -310D, -332A (or Computer Science 308-200A,B); Mining 306-332A, -431A, -433B; 3 credits elective.

U3: Geology 186-303D, -443D, -433B; Mining 306-334B, -435B; 9 credits elective.

HONOURS IN SOLID EARTH GEOPHYSICS

U1: Physics 198-251A, -261B, -252A, -262B, -233A (or Chemistry 180-213A,B); Mathematics 189-247A, -248A, -249B, -325B; Geology 186-210B, -231F (Field school, at close of session).

U2: Physics 198-355A, -328A,B; Geology 186-310D, -220B, -332A (or Computer Science 308-200A,B); Mining 306-332A, -431A, -433B; 3 credits elective.

U3: Geology 186-303D, -433D, -481D; Mining 306-334B, -435B; 6 credits elective.

COURSE DESCRIPTIONS

186-220B ELEMENTARY EARTH PHYSICS. (3 credits; 3 hours lectures, one of which may be replaced by a conference). Physical properties of the earth and the processes associated with its existence as inferred from astronomy, geodesy, seismology, geology, terrestrial magnetic and thermal effects, geochemistry, etc. Critical evaluation of hypotheses explaining the above.
Professor Saull

186-443D SOLID EARTH GEOPHYSICS. (6 credits; 3 hours lectures; Prerequisite: 186-220B). A general practical coverage of solid earth geophysics including gravity, seismology, heat flow, and magnetism.
Professors Saull, Doig, Telford and Jensen

186-481D GEOPHYSICAL RESEARCH PROJECT. (6 credits; for Honours Solid Earth Geophysics students in 3rd year). Under the supervision of one of the members of the Solid Earth Geophysics Group, the student will undertake an approved investigation and prepare the results in the form of a research paper.
Staff

Department of Mining and Metallurgy (Faculty of Engineering)

306-230B GEOPHYSICAL EXPLORATION. (3 credits; 2 lectures and 2 hours laboratory). Survey course covering applications of seismic, gravimetric, magnetic and electrical techniques in exploring for oil and minerals. Laboratory work involves experiments illustrating basic principles of the various techniques.
Professor Telford

306-332A MATHEMATICAL APPLICATIONS IN GEOPHYSICS. (2 credits; 2 lectures; Prerequisite: 306-220B). Vectors, elementary tensors, and relaxation methods applied to geophysical analysis.

306-334B POTENTIAL THEORY IN GEOPHYSICS. (2 credits; 2 lectures; Prerequisite: 306-332A). Applications of potential theory in gravity, electrostatics, magnetostatics, solution of Laplace's

and Poisson's equations, earth's gravity and magnetic fields. (Not open to students who have taken 306-434B).

306-431A ADVANCED EXPLORATION GEOPHYSICS I. (3 credits; 2 lectures and 3 hours laboratory; Prerequisite: Permission of the instructor). Applications of gravity and magnetic methods in petroleum and mineral exploration with particular emphasis on instruments, field methods, and interpretation of results. (Not open to students who have taken 306-331A).
Professor Telford

306-433B ADVANCED EXPLORATION GEOPHYSICS II. (3 credits; 2 lectures and 3 hours laboratory; Prerequisite: 306-331A and consultation with instructor). Applications of electrical methods in petroleum and mineral exploration with particular emphasis on instruments, field operations and interpretation of results.
Professor Telford

306-435B ADVANCED EXPLORATION GEOPHYSICS III. (3 credits; 2 lectures and 3 hours laboratory; Prerequisites: 306-331A, -433B and consultation with instructor). Seismic methods in petroleum exploration, instrumentation, field operations, processing of data and interpretation of results.
Professor Jensen

306-436B ADVANCED EXPLORATION GEOPHYSICS IV. (3 credits; 2 lectures and 3 hours laboratory; Prerequisite: 306-331A, -433B and consultation with instructor). Seismic methods in mineral exploration and engineering geophysics. Radioactivity method, instrumentation and interpretation of results. Well logging techniques with particular emphasis on instrumentation; interpretation of petroleum well logs; applications in mineral exploration areas.
Professor Telford

IMMUNOLOGY INTERDEPARTMENTAL HONOURS PROGRAM

The Honours program in Immunology is offered by the three Departments: Biochemistry, Microbiology & Immunology and Physiology. The program will be administered by the Department of Microbiology & Immunology and coordinated by Dr. Julius Gordon. Students interested in the program should contact Dr. Gordon at the Department of Experimental Surgery, Donner Building, Telephone 392-4859.

The program is a rigid one which will prepare the student for graduate work in immunology in any of the three participating departments. Admission requirements are: U-1, GPA 3.00 or equivalent; U-2, 3.10 and U-3, 3.20.

The course requirements are as follows:

U1: Biology 177-201D; Chemistry 180-204A, 180-212A,B, 180-214B, 180-222A,B; Mathematics 189-222A,B; Physiology 552-211D; Anatomy 504-261A.

U2: Biology 177-301A,B, 177-302A,B, 177-309A, 177-310B; Biochemistry 507-302D; Chemistry 180-313A; Microbiology 528-311A, 528-314B; six credits from the following: Biochemistry 507-404B; Chemistry 180-352B; Computer Science 308-220A,B or Physiology 552-312D.

U3: Biology 177-314A; Biochemistry 507-450A, 507-454A, 507-503B; Microbiology 528-527B; Physiology 552-411A, 552-513D; six credits from the following: Anatomy 504-462D, Computer Science 308-220A,B; Microbiology 528-424A, 523-501D or Physiology 552-312D.

MARINE SCIENCES (395)

395-537B ADVANCED INVERTEBRATE ZOOLOGY. (3 credits; Prerequisite: 177-348D). Descriptions of selected marine invertebrate taxa. Functional morphology, ecology and evolution. Feeding mechanisms; reproductior patterns; interactions with other marine organisms; laboratory techniques.

MATHEMATICS (189)

Professors — E. ROSENTHALL *(Chairman);* M. BARR; I. CONNELL; C. HERZ; H. KAUFMAN; J. LAMBEK; W. MOSER; H. RUBEN; V. SESHADRI; C. SOLIN; J. TAYLOR.

Visiting Professor (1975-76) — J. DUGUNDJI.

Associate Professors — S. MELAMED *(Assistant Chairman);* W. BROWN; J. CHOKSI; C. COSTLEY; S. DRURY; A. EVANS; D. GILDENHUYS; K. GOWRISANKARAN; M. HERSCHORN; W. JONSSON; E. KOUNIAS; J. LABUTE; B. LAWRUK; M. MAKKAI; A. MATHAI; S. NEGREPONTIS; T. OKUBO; B. RATTRAY; R. RIGELHOF; C. ROTH; N. SANCHO; G. SCHMIDT; G. STYAN; D. SUSSMAN; K. TAM; J. TURNER; R. VEFMES.

Visiting Associate Professors (1975-76) — E. THOMAS, Z. ZIEGLER.

Assistant Professors — W. ANDERSON; M. BUNGE; W. LANGFORD; S. MASLOWE; T. PAPAIOANNOU; E. ROWLINSON; K. RUSSELL; D. WOLFSON; S. ZLOBEC.

Visiting Assistant Professors (1975-76) — W. FLEISSNER; C. GOWRISANKARAN; S. SHNIDER; R. STERN; B. TAYLOR.

Research Visitors 1975-76 — J. BEACHY; R. DIACONESCU; J. FISCHER; G. KLINCSEK; P. ROBERTS; S. SHNIDER; L. STOUT; A. SWETT; A. de la TORRE.

Special Lecturers — T. BELL.

Lecturers — H. de ARAZOZA; W. BUTLER; R. DIACONESCU; J. FISCHER; G. FLEISCHER; R. GANONG; J. GOH; D. KINGSBURY; G. KLINCSEK; K. MacKENZIE; S. PUNHANI; E. SAWYER;

G. de SCHMIDT; H. SCHWERDTFEGER; A. SIMON; L. SO_VASON; L. STOUT; A. de la TORRE; M. UPHAM.

Burnside Hall, Room 1005,
Telephone: 392-5369.

Early mathematics consisted for the most part of empirical rules for performing operations on concrete objects by means of numerical processes. From this, mathematics has evolved to a discipline which is mainly characterized by its method of proof, its concern for a progressive broadening of its concepts, and by the search for mathematical entities and operations that represent aspects of reality. It is a subject which is pursued by many for its own sake, and regarded as part of the mainstream of human culture. Mathematics pervades modern society with an impact which, already immense, is rapidly growing.

The two principal divisions of mathematics are pure mathematics and applied mathematics. The pure mathematician is interested in abstract mathematical structures and in mathematics as an intellectual enterprise. He may even view his subject as an art. He is not primarily concerned with its utilitarian aspects or with the current needs of science and technology, although many problems in pure mathematics have developed from the sciences.

The applied mathematician is more interested in how he can use his mathematics to study some aspects of the world around him. He is engaged in the creation, study and application of advanced mathematical methods relevant to scientific problems. Statistical science and methodology today is concerned with phenomena in which there is a background of uncertainty arising from inherent variability, and the investigator is obliged to arrive at decisions from limited contingent data generated by such phenomena. A key tool in statistics is the calculus of probability.

Some of the fields in which pure mathematicians work are algebra, analysis, geometry, topology, number theory and foundations. Applied Mathematics which once referred to the application of mathematics to such disciplines as mechanics and fluid dynamics, has currently assumed a much broader meaning and embraces such diverse fields as communication theory, theory of optimization, theory of games and numerical analysis.

Mathematics offers many vocational possibilities. Such fields as teaching, computing, applied statistics and actuarial science offer opportunities for B.Sc. graduates. Opportunities to do original research in pure and applied mathematics are available in universities and similar institutions. Employment is to be found in financially or technologically oriented business firms.

The Department of Mathematics through its various programs attempts to provide courses to suit the diverse interests and attitudes within mathematics.

The Honours Program in Mathematics demands of the student a certain talent for abstraction in addition to a high level of competence in the use of mathematical tools. This program is intended for students who plan to work in an area where mathematical innovations may be needed. It is almost essential for students contemplating a career in mathematical research.

The Major Program involves the same subjects as the Honours Program but is less demanding in terms of abstraction. It is designed primarily for students who will need mathematical tools in their work but whose creative activity will involve applications of mathematics to other areas, but not to mathematics itself. Within the framework of the mathematics major, various combinations of courses are suggested to meet the needs of different students. These include course suggestions for secondary school teachers, careers in management, and for careers in industry, government or actuarial sciences.

It is possible for a Major student to include a number of Honours courses in his program. This will be an advantage for those students who plan to use their mathematics in graduate studies.

Students interested in a less intensive mathematics program linked to other disciplines are advised to consider the available Faculty Programs.

In planning their programs students are advised to seriously consider developing some depth in another discipline — preferably one for which mathematics has some relevance and use. Mathematics has always been closely linked to areas such as physics and engineering but has recently come to play an increasingly important role in fields such as biology, linguistics, management and psychology.

FACULTY PROGRAMS

Programs linking mathematics and other disciplines are available. With careful selection of courses in U1, it is possible to transfer to a Major program in Mathematics in U2. Except where otherwise noted these faculty programs lead to a B.Sc. degree. See details on page .

MAJOR PROGRAM

Programs of study for students entering U1 in 1976-77.

The compulsory courses are 189-120A,B, -121A,B, -221A,B, -222A,B, -245A,B.

Advisers will approve a program of 54 credits including 48 credits in Mathematics (excluding 120A,B, 121A,B, 221A,B) of which at least 36 credits will be selected from the following: 189-217A, -218B, -242A, -243B, -246A,B, -314A,B, -315A,B, -316B, -317A, -318A, -319B, -323A,B, -324A,B, -327B, -328B, -333A, -346B, -348A, -349B, -360B, -369D, -407B, -414A,B, -415A, -416A, -417A, -419B, -423A, -424B, -425A, -427B, -447B. The remaining 6 credits to be selected from Mathematics or a related discipline in consultation with the Adviser.

Guidelines for Selection of Courses in the Major Program

a) Students are advised to include the following courses in their program: 189-246A,B, -314A,B, -315A,B, -317A, -323A,B, -324A,B, 308-20CA,B.

b) Students planning to pursue graduate studies are advised to include 189-242A, -243B and -333A in their program, and to consider substituting one or more Honours courses for the corresponding courses in the Major program.

c) Students considering a career in teaching are advised to include in their program the following courses: 189-217A, -218B, -242A, -318A, -328B, -338B, 348B, -349B.

d) Students interested in probability and statistics are advised to also include in their program the following courses: 189-242A, -407B, -414B, -424B, -425A, -447B, as well as a course in Fortran such as 308-200A,B. With the instructor's permission the graduate courses 189-682A, 308-690A, -691B might also be included.

e) Students interested in applied mathematics are advised to include in their program some or all of the following courses: 189-218B, -242A, -316B, -319B, -323A,B, -324A,B, -327B, -407B, -414B, -415A, -416A, -417A, -419B, -427B, 308-200A,B.

f) Students interested in computer science are advised to register in the following courses: 189-318A, -327B, -328B, -417A, -427B, 308-200A,B, -300A,B; they should choose additional courses from 189-319B, -415A, -416A, -419B, -423A, -424B, -425A, -447B, -308-640D*, -610A*, -690A*, -691B* or -698A* and -699B*.

g) Students interested in careers in actuarial work in industry or government are advised to select courses from the following list: 189-319B, -327B, -328B, -329D, -369D, -415A, -416A, -417A, -419B, -423A, -424B, -425A, -447B, 308-200A,B.

The student's attention is called to the fact that a B.Com. degree with a Major in Mathematics is available from the Faculty of Management. In addition the Faculty of Music offers the B.Mus. degree with Honours in Theory with Mathematics Option.

*These courses require special permission from the instructors.

HONOURS PROGRAM

The minimum requirement for entry into the Honours Program is that the student has completed with high standing the following courses (or their equivalents); 189-120A,B, -121A,B, -221A,B.

Requirements for Honours in Mathematics

For an Honours Degree in Mathematics the student must obtain 90 course credits; at least 60 of these should correspond to Honours courses (or their equivalent), not less than 45 to Honours courses in Mathematics. In addition to the latter, the student may count towards his the 60 credit Honours requirement:

i) half of the courses taken from the Major Program in Mathematics (including Computer Science courses) for which no equivalent Honours course exists;

ii) (with the approval of the Department of Mathematics) certain courses in other departments which are at an Honours level, and are closely linked to Mathematics,

iii) (with the approval of the Department of Mathematics) half the courses taken in other departments, which while not necessarily explicitly mathematical in nature, are at an Honours level and broaden the student's scientific training. Students who transfer to Honours in Mathematics from other programs will have credits for previous courses assigned, as appropriate, by the Department.

The following courses are compulsory: 189-250A,B, -251A,B, -254A,B, -255A,B, -371D, -372D.

To remain in the Honours Program, and to be awarded the Honours Degree, the student must maintain a 2.8 Grade Point Average in the approved Mathematics courses of the Honours program.

Guidelines for Selection of Courses in the Honours Program

a) The compulsory courses may be spread over the three years of study.

b) Students taking 189-250A,B, -251A,B and 189-254A,B, -255A,B simultaneously are advised to register also for 189-258A, -259B.

c) Students are advised to include in their program the following courses: 189-356A, -357B, -374D, -380D.

d) Students interested in Statistics should register for 189-556D and -587D in addition to -356A and -357B.

e) Students in Applied Mathematics should register for some or all of the courses 189, -574A, -575B, -578A and -579B, -585A, -586B din addition to -374D. They are also advised to select courses in areas to which they can apply their mathematics.

COURSE DESCRIPTIONS

189-112A,B FUNDAMENTALS OF MATHEMATICS. (3 credits). Sets, relations, functions and graphs, the real number system, inequalities, mathematical induction, permutations and combinations, binomial theorem, trigonometric functions and their properties.
Professor Rowlinson

189-120A,B CALCULUS I. (3 credits). Analytic geometry of straight line and circle. Limits, continuity, derivative. Differentiation of elementary functions. Applications. (Not open to students who have taken or are taking 189-E14,-E16,-201).
Professor Gowrisankaran and Staff

189-121A,B CALCULUS II. (3 credits; Prerequisite: 189-120A,B). The definite integral. Techniques of antidifferentiation. Applications. (Not open to students who have taken or are taking 189-E15,-E17, -202).
Professor Gowrisankaran and Staff

189-203A BASIC PRINCIPLES AND METHODOLOGY OF STATISTICS I. (3 credits). Typical examples of statistical data and the use of graphical means to summarize the data. Some basic distributions arising in the natural and behavioural sciences. The logical meaning of a test of significance with applications to single observations, sums, differences, and means. The analysis of categorical and frequency data. The interrelation of two variables. The use of correlation coefficients as exploratory tools. (This course is intended for students in all disciplines and is not open to students in Major Mathematics. Not open to students who have taken or are taking 189-323. No calculus prerequisites.)

Note: Students who successfully complete this course need not take for credit certain other introductory statistics courses offered elsewhere in the university. A list of these courses is available in the Mathematics Department.
Professor Wolfson

189-204B BASIC PRINCIPLES AND METHODOLOGY OF STATISTICS II. (3 credits; Prerequisite: 189-203A or equivalent). The concept of degrees of freedom and the analysis of variability. Planning of experiments. Some useful experimental designs. Polynomial and multiple regressions. Further use of correlation coefficients as exploratory tools. Basic principles of estimation. General statistical procedures requiring few assumptions about the probability model. (This course is intended for students in all disciplines and is not open to students in Major Mathematics. Not open to students who have taken or are taking 189-323. No calculus prerequisites.)

Note: Students who successfully complete this course need not take for credit certain other introductory statistics courses offered elsewhere in the university. A list of these courses is available in the Mathematics Department.
Professor Wolfson

189-205A FINITE MATHEMATICS I. (3 credits). *Not given in 1976-77.* An introduction to probability, vectors and matrices with applications to the social sciences. (Not open to students who have taken or are taking 189-231, -323).

189-206B FINITE MATHEMATICS II. (3 credits; Prerequisite: 189-205A). *Not given in 1976-77.* Topics in probability and statistics, linear programming and the theory of games. (Not open to students who have taken or are taking 189-232, -323.)

189-217A ABSTRACT ALGEBRA I. (3 credits). Sets; relations and operations; the natural numbers; the integers; different number bases; Pythagorian triples; congruences and diophantine equations; the rational and real numbers; complex numbers and their representations; primitive roots and De Moivre's theorem.
Professor Rowlinson

189-218B ABSTRACT ALGEBRA II. (3 credits; Prerequisite: 189-217A or equivalent). Groups; rings; integral domains; division rings; fields; polynomials; Boolean algebras.
Professor Rowlinson

189-221A,B ANALYTICAL GEOMETRY AND VECTORS. (3 credits; Prerequisite: 189-121A,B). Vectors, lines and planes, coordinate systems in three dimensions, inner products, quadric surfaces, vector-valued functions. Applications. (Not open to students who have taken 189-E21).
Professor Solin and Staff

189-222A,B CALCULUS III. (3 credits; Prerequisite: 189-221A,B). Infinite series. Length, curvature; partial differentiation, multiple integration and applications. (Not open to students who have taken 189-E22).
Professor Solin and Staff

189-223A LINEAR ALGEBRA. (3 credits). Algebra of matrices and determinants, systems of linear equations. Vector spaces, linear operators and their matrix representations, unitary vector spaces, orthogonality. Eigenvalues and eigenvectors, diagonalization of Hermitian matrices. Applications (This course covers most of the topics in 189-245, -246. It is not open to students in Major Mathematics nor to students who have taken or are taking 189-224, -245, -247).
Professor Melamed

189-224A,B APPLIED MATRIX ALGEBRA. (3 credits). Matrix addition and multiplication. Partitioning into blocks. Trace and determinant. Simultaneous linear equations. Rank and inverse. Positive definite and semi-definite matrices; quadratid forms. Characteristic roots and vectors of symmetric matrices, and reduction to diagonal form. Emphasis towards applications in business and management. (Intended for students interested in applications of matrix algebra to Management, Social Sciences, and similar fields of endeavour. This course is not open to students in Major Mathematics nor to students who have taken or are taking 189-223, -245, -247).
Professor Styan and Staff

189-231A,B MATHEMATICS FOR BIOLOGISTS. (3 credits; Prerequisite: 189-121A,B). Introductory probability theory, vectors and matrices, differential and difference equations with applications to the

biological sciences. (This course is not open to students in Major Mathematics nor to students who have taken or are taking 189-205, -323).
Professor Turner and Staff

189-232A,B MATHEMATICAL METHODS IN BIOLOGY AND THE BEHAVIOURAL SCIENCES. (3 credits; Prerequisite: 189-231A,B or equivalent). Topics in probability and statistics, linear programming, and game theory with applications to the behavioural and biological sciences. (This course is not open to students in Major Mathematics nor to students who have taken or are taking 189-206 -323).
Professor Turner

189-242A REAL ANALYSIS. (3 credits). Real numbers. Limits and continuity, sequences. Properties of continuous functions. Introduction to metric spaces. (Not open to students who have taken or are taking 189-252).

189-243B REAL ANALYSIS II. (3 credits; Prerequisite: 189-242A). Continuity, uniform continuity and differentiability on the real line; fundamental theorems. Taylor's theorem and applications. Infinite series.
Professor Herschorn

189-245A,B LINEAR ALGEBRA I. (3 credits). Simultaneous linear equations and inequalities. Matrices. Linear dependence, rank and inverse. Trace and determinant. Partitioning into blocks. Quadratic forms, positive definite and semidefinite matrices. Orthogonal matrices. Characteristic roots and vectors, similarity of matrices. (Not open to students who have taken or are taking 189-223, -224, -247).
Professor Rattray and Staff

189-246A,B LINEAR ALGEBRA II. (3 credits; Prerequisite: 189-245A,B). Abstract vector spaces over the real and complex numbers. Linear operations, matrix representations. Vector and operator norms. Eigenvectors and eigenvalues. Linear, quadratic and Hermitian forms. Inner product spaces, unitary and orthoganal transformations, the adjoint of an operator, self-adjoint and normal operators. Applications. (Not open to students who have taken or are taking 189-247).
Professor Rattray and Staff

189-247A LINEAR ALGEBRA. (3 credits). Matrix algebra; elementary operations; rank and inverses; determinants and square matrices; numerical solutions of simultaneous linear equations; eigenvalues and eigenvectors; unitary transformations; similarity transformations; reduction to diagonal form, defective matrices; quadratic forms and the variational principle; norms and error estimates; abstract vector spaces and linear equations; isomorphisms; coordinates, change of basis and linear transformations. Inner product spaces, orthogonality. (This course is intended for Honours Physics students and others suitably qualified. Not open to students who have taken or are taking 189-246).
Professor Costley

189-248A ADVANCED CALCULUS I. (3 credits; Prerequisite: 189-221A,B). Partial derivatives; implicit functions; Jacobians; maxima and minima; Lagrange multipliers. Scalar and vector fields; orthogonal curvilinear coordinates. Improper integrals; multiple integrals; arc length, volume and surface area. Line integrals; Green's theorem; the divergence theorem. Stokes' theorem; irrotational and solenoidal fields; applications. (This course is intended for Honours Physics students and others suitably qualified. Not open to students who have taken or are taking 189-314).
Professor Tam

189-249B ADVANCED CALCULUS II. (3 credits; Prerequisite: 189-248A). Functions of a complex variable; Cauchy-Riemann equations; Cauchy's theorem and consequences. Taylor and Laurent expansions. Residue calculus; evaluation of real integrals; integral representation of special functions; the complex inversion integral. Conformal mapping; Schwarz-Christoffel transformation; Poisson's integral formulas; applications. (This course is intended for Honours Physics students and others suitably qualified. Not open to students who have taken or are taking 189-316).
Professor Tam

189-250A,B ALGEBRA I (Part I). (4 credits). Groups, rings and fields; intensive linear algebra, including quadratic forms and the canonical forms of linear transformations; some elementary number theory (diophantine equations and congruences); polynomial rings. (Not open to students who have taken 189-271D).

189-251A,B ALGEBRA I (Part II). (4 credits; Prerequisite: 189-250A,B). Continuation of 189-250A,B. (Not open to students who have taken 189-271D).

189-254A,B ANALYSIS I (Part I). (4 credits). The real number system, metric properties of R^n, convergence, continuity, multivariable calculus, inverse and implicit function theorems, Stokes' theorem. (Not open to students who have taken 189-272D).

189-255A,B ANALYSIS I (Part II). (4 credits; Prerequisite: 189-254A,B). Continuation of 189-254A,B. (Not open to students who have taken 189-272D).

189-258A PROBLEM SEMINAR (Part I). (2 credits; 2 hours conference). The course is designed to complement Algebra I and Analysis I courses. Problems in other areas may be selected to suit the class. (Not open to students who have taken 189-273D).

189-259B PROBLEM SEMINAR (Part II). (2 credits; 2 hours conference). The course is designed to complement Algebra I and Analysis I courses. Prob-

lems in other areas may be selected to suit the class. (Not open to students who have taken 189-273D).

189-314A,B ADVANCED CALCULUS. (3 credits; Prerequisite: 189-222A,B). Constrained maxima and minima. Jacobians. Multiple integration. Line and surface integrals. Theorems of Green, Stokes and Gauss. Introduction to elliptic integrals. (Not open to students who have taken or are taking 189-248).
Professor Choksi

189-315A,B ORDINARY DIFFERENTIAL EQUATIONS I. (3 credits; Prerequisite: 189-222A,B). First order ordinary differential equations. Linear equations with constant coefficients, Laplace transform. Series solutions. (Not open to students who have taken or are taking 189-325).

189-316B FUNCTIONS OF A COMPLEX VARIABLE. (3 credits; Prerequisite: 189-314A,B). Algebra of complex numbers. Cauchy-Riemann equations. Complex integral. Cauchy's theorem. Taylor and Laurent series. Residue theory and applications. (Not open to students who have taken or are taking 189-249).
Professor Melamed

189-317A INTRODUCTION TO NUMERICAL ANALYSIS. (3 credits; Prerequisites: 189-222A,B, 308-200A,B or equivalent). Error analysis. Numerical solutions of equations by iteration. Interpolation. Numerical integration. Introduction to numerical solutions of differential equations. Programming assumed. Some lab work necessary.
Professors Evans and Vermes

189-318A MATHEMATICAL LOGIC. (3 credits). Propositional calculus, truth-tables, switching circuits, natural deduction, first order predicate calculus, axiomatic theories, set theory.
Professors Lambek and Rattray

189-319B DIFFERENTIAL EQUATIONS. (3 credits; Corequisite 1976-77 189-314A,B; Prerequisites: 189-245A,B, -314A,B, -315A,B). Partial differential equations of mathematical physics. Boundary value problems, classification of partial differential equations, method of characteristics. Fourier expansions. Introduction to Sturm-Liouville theory.

189-323A,B INTRODUCTION TO PROBABILITY THEORY AND RANDOM VARIABLES. (3 credits; Prerequisites: 189-121A,B, or equivalent). Sample space of an experiment, events. Conditional probability. Statistical independence. Bayes' theorem, with applications. Random variables, univariate distribution functions. The binominal, Poisson, hypergeometric, uniform, exponential and normal distributions. Mathematical expectation. The weak law of large numbers. The Poisson process, with applications. The central limit theorem. (This course is intended for students in science, engineering and related disciplines, who have had one year of calculus. Not open to students who have taken or are taking 189-204, -232, -356).
Professors Anderson and Mathai

189-324A,B INTRODUCTION TO STATISTICS. (3 credits; Prerequisite: 189-323A,B or equivalent). The notion of a random sample. Sampling distributions, with particular reference to those related to the normal: Chi-square, F and t. Point estimation. Hypothesis testing, the notion of power function. Likelihood-ratio tests. Contingency tables, goodness-of-fit and homogeneity tests. Regression and the method of least squares, analysis of variance, with applications. Some nonparametric procedures. (Not open to students who have taken or are taking 189-357).
Professors Anderson and Mathai

189-325B ORDINARY DIFFERENTIAL EQUATIONS. (3 credits; Prerequisite: 189-222A,B). First order differential equations; second order linear equations; series solution of second order equations; Fourier series; self-adjoint boundary value problems; Legendre polynominals and Bessel functions. (This course is intended for Honours Physics students and others suitably qualified. Not open to students who have taken or are taking 189-315).
Professor Maslowe

189-327B MATRIX NUMERICAL ANALYSIS. (3 credits; Prerequisites: 189-246A,B, -317A). Numerical methods for solving systems of linear algebraic equations, matrix inversion and eigenvalue problems. Introduction to differential boundary value problems.
Professor Zlobec

189-328B COMPUTABILITY AND MATHEMATICAL LINGUISTICS. (3 credits). Propositional calculus, switching circuits, computability, recursive functions, Turing machines, automata, self-reproducing machines, formal and natural languages. Post canonical languages, phrase structure and transformational grammars.
Professor Lambek

189-329D THEORY OF INTEREST AND LIFE INSURANCE. (6 credits; Prerequisite: 189-121A,B). Simple and compound interest, discount, annuities certain, sinking funds, bonds, mortgage amortization, depreciation, calculation of life annuities, premiums and reserves on life insurance policies.
Professors Solin and Brown

189-333A ANALYSIS. (3 credits; Prerequisite: 189-243B). Riemann-Stielties integral; sequences and series of functions; metric spaces; connectedness; completeness and compactness; Weierstrass approximation theorem; Fourier series.
Professor Herschorn

189-338B TOPICS IN HISTORY AND PHILOSOPHY OF MATHEMATICS. (3 credits). Important mathematical concepts will be studied in their

historical perspective up to the most recent developments: the number system, time and space, the infinitely small and the infinitely large, sets, types and categories. Discussion of famous problems and unsolved problems.
Professor Lambek

189-346B NUMBER THEORY. (3 credits). Divisibility. Congruences. Quadratic reciprocity. Diophantine equations. Arithmetical functions.
Professor Rosenthall

189-348A TOPICS IN GEOMETRY. (3 credits). Isometry: symmetry and groups. Non-euclidean geometry.
Professor Moser

189-349B TOPICS IN GEOMETRY. (3 credits). Convexity: isoperimetric and combinatorial-geometric problems. Rubber-sheet geometry: classification of surfaces, path problems, map-colour problems.
Professor Moser

189-356A INTRODUCTION TO PROBABILITY. (3 credits). General foundations and applications. Combinatorial probability. The binomial, Poisson, hypergeometric distributions. Simple random walks. Continuous distribution functions. The uniform, exponential, normal distributions. Introduction to Markov processes.
Professor Mathai

189-357B INTRODUCTION TO STATISTICS. (3 credits; Prerequisite: 189-356A or equivalent). Data analysis. Measures of location and dispersion. Derived probability distributions. The t, chi-square, F-distributions. Estimation and hypothesis testing. Introduction to Bayesian and decision theory methods. Power of tests. The chi-square goodness of fit test. Introduction to regression analysis, and analysis of variance.
Professor Mathai

189-360B GROUPS AND THEIR REPRESENTATIONS. (3 credits). *Not given in 1976-77.* Elements of group theory. Symmetry groups. Unitary vector spaces, linear operators and their matrix representations, invariance of functions and operators, classification of eigenfunctions. Reducibility, Schur's lemmas, general orthogonality relations, character tables. Kronecker product and adjoint representations, Hermitian invariants, Clebsch-Gordon series. Characters of the symmetric group.

189-369D THEORY OF FINITE DIFFERENCES AND LIFE CONTINGENCIES. (6 credits; Prerequisite: 189-222A,B). Finite differences, theory of interest and of single and multiple life functions.
Mr. Bell

189-371D ALGEBRA II. (6 credits; Prerequisite: 189-250A,B, -251A,B). Commutative algebra (modules over a principal ideal domain, extensions of the rationals, unique factorization domains); field theory to include the fundamental theorem of Galois theory; group theory continued up to the Sylow theorems; the Jordan-Hoelder theorem.
Professor Gildenhuys

189-372D ANALYSIS II. (8 credits; Prerequisite: 189-254A,B, -255A,B). Metric spaces; Lebesgue-Stieltjes integration; series expansions of functions (including l_2 theory); power series; analytic functions; contour integration; Cauchy's theorem and a wide variety of consequences, normal families.

189-373D PROBLEM SEMINAR. (4 credits; 2 hours conference). Course intended to develop problem solving ability.

189-374D ORDINARY AND PARTIAL DIFFERENTIAL EQUATIONS. (6 credits; Prerequisites: 189-245A,B, -254A,B, -255A,B; Corequisite: 189-372D). Existence and uniqueness theorems, systems of equations; Sturm-Liouville equations, power series solutions and special functions; homogeneous equations, phase space. First and second order partial differential equations, the Laplace wave and heat equation; Fourier transforms distributions, Hilbert space methods.
Professor Rigelhof

189-377B NUMBER THEORY. (3 credits; Prerequisites: 189-254A,B, -255A,B). Basic elementary and algebraic number theory; use of computer in diophantine problems, in particular those connected with modular functions and the arithmetic of elliptic curves. (Previous experience in computer programming not necessary).
Professors Brown and Connell

189-380D GEOMETRY AND TOPOLOGY. (6 credits; Prerequisites: 189-250A,B, -251A,B, -254A,B, -255A,B). *Not given in 1977-78.* A study of curves and surfaces with a view to motivating basic notions of differential geometry, algebraic topology and differential topology.

189-407B DYNAMIC PROGRAMMING. (3 credits; Prerequisites: 189-245A,B, -314A,B). Optimum allocation of resources. Dynamic programming versus direct enumeration. Optimum equipment replacement models. Investment analysis, selling and purchasing. Optimum Markovian decision processes. The Travelling Salesman problem.
Professor Sancho

189-414B MATHEMATICAL MODELS IN APPLICATIONS. (3 credits; Prerequisites: 189-245A,B, -323A,B, (or -231A,B, -232A,B), -315A,B). Models in Environmental Science: Population dynamics; birth and death process, dynamics of host-parasite populations. Mathematical regularities — in traffic flow, size of cities, epidemics and rumours. Input-output models with industrial and economic applications. Markov and semi-Markov models. Some models of graphs; networks.
Professor Turner

189-415A ORDINARY DIFFERENTIAL EQUATIONS II. (3 credits; Prerequisites: 189-242A, -246A,B, -314A,B, -315A,B). Systems of linear ordinary differential equations, nonlinear systems, stability of linear systems, stability of periodic solutions, limit cycles, autonomous systems, applications.
Professor Kaufman

189-416A COMBINATORICS. (3 credits; Prerequisites: i) 189-222A,B, ii) one of 189-217A, -218B, -223A, -231A,B, -245A,B or equivalents). An introductory half-course in combinatorics intended for Mathematics Major students and others who lack the time or the prerequisites to enrol in 189-461D (Combinatorial Mathematics). The lectures of the two courses may coincide (for the First term); however, students of 189-416A will be examined at the end of the First term, while students in 189-461D will continue on in the Second term and be exposed to current research papers. (Honours credit is available only through registration in 189-461D.)
Professor Moser

189-417A MATHEMATICAL PROGRAMMING. (3 credits; Prerequisites: 189-246A,B, -314A,B or equivalent). Linear programming; simplex method; duality theory. Nonlinear programming; Lagrange-Kuhn-Tucker optimality conditions. Numerical methods for solving unconstrained and constrained maximization problems. Applications to realistic problems. Computer programming knowledge is assumed.
Professor Zlobec

189-419B VARIATIONAL METHODS OF APPLIED MATHEMATICS. (3 credits; Prerequisites: 189-245A,B, -314A,B, -319B). *Not given in 1976-77.* Functionals, Euler-Lagrange necessary condition for an extremum, extrema with constraints, minimum characterization of the eigenvalue-eigenfunction problem, applications selected from optimization, control theory and natural philosophy.
Professor Langford

189-423A INTRODUCTION TO REGRESSION AND ANALYSIS OF VARIANCE. (3 credits; Prerequisites: 189-324A,B and -245A,B or equivalent). Simple and multiple linear regression. Least squares estimators and their properties. Tests of hypotheses; the F-test. One- and two-way analysis of variance. The general linear model. Prediction and confidence intervals. Orthogonal and non-orthogonal designs. Weighted least squares.
Professor Anderson

189-424B INTRODUCTION TO NONPARAMETRIC STATISTICS. (3 credits; Prerequisite: 189-324A,B). Tests of goodness of fit: Pearson's chi-square test for multinomial populations. Contingency tables. Sample distribution function. Nonparametric procedures including the Cramer-von Mises and Kolmogorov-Smirnow tests. Order statistics. Tests for normality.
Professor Seshadri

189-425A SAMPLING SURVEY THEORY AND APPLICATIONS. (3 credits; Prerequisites: 189-323A,B, -324A,B or equivalent). Advantages of sampling compared to complete enumeration, with special reference to human populations and public opinion polls (greater speed in obtaining and analysing results, smaller cost, greater accuracy of results). Requirements of a good sampling scheme. Main types of sampling and their properties. Use of adjustments based on supplementary information.
Professor Wolfson

189-427B NUMERICAL SOLUTIONS OF DIFFERENTIAL EQUATIONS. (3 credits; Prerequisites: 189-315A,B -317A or equivalent). Runge-Kutta and predictor-corrector methods applied to first and higher order systems. Error analysis, step size and stability. Some boundary value problems. Introduction to partial differential equations.
Professor Evans

189-447B ELEMENTARY STOCHASTIC PROCESSES. (3 credits; Prerequisites: 189-245A,B, -323A,B). Random walk on the integers and gambler's ruin problem; the Galton-Watson branching process; Markov chains and their applications in the physical and social sciences; birth and death processes and their applications to biological growth problems.
Professor Mathai

189-461D COMBINATORIAL MATHEMATICS. (6 credits; Prerequisites: 189-242A or equivalent and -246A,B or equivalent). *This course will be given in alternate years. Not given in 1976-77.* After a study of fundamentals (partitions and compositions, principle of inclusion and exclusion, etc.) students will be introduced to combinatorial aspects of several fields (graph theory, designs, set theory, group theory, geometry, number theory, etc.) from classical up to and including current research.

189-489A MATHEMATICAL LOGIC. (3 credits). Propositional calculus and first order predicate calculus; completeness, compactness, and normal form theorems; theorems of Herband, Craig, Beth, and Gentzen.
Professor Makkai

189-490B MATHEMATICAL LOGIC. (3 credits). Alternately either (1) an introduction to recursion theory, undecidability theorems of Godel and Church, recursively enumerable sets, degrees; or (2) an introduction to model theory, ultraproducts, saturated models, elimination of quantifiers, decidability.
Professor Makkai

189-551A COMPLEX ANALYSIS I. (3 credits). *Not given in 1976-77.* Maximum modulus theorem, Rouche's theorem, Weierstrass and Vitali's theorem

on convergence of holomorphic functions, normal families. Conformal mapping, harmonic functions, entire and meromorphic functions.

189-552B COMPLEX ANALYSIS II. (3 credits). *Not given in 1976-77.* Selected topics from the Theory of a Complex Variable.

189-555D FLUID DYNAMICS. (6 credits). *Not given in 1976-77.* Kinematics. Dynamics of general fluids, inviscid fluids, Navier-Stokes equations. Exact solutions of the Navier-Stokes equations. Perturbation methods. Flow at small Reynolds number. Flow at high Reynolds number. Stability.

189-556D MATHEMATICAL STATISTICS. (6 credits; Prerequisite: 189-357B or equivalent). Probability and distribution theory including discussion of some basic distributions in p-space. Regression and correlation theory. Laws of large numbers and central limit theorem. Sampling theory (including large-sample theory.) Likelihood functions and information matrices. Hypothesis testing, estimation theory and decision theory. Distribution-free procedures.
Professor Ruben

189-571D HIGHER ALGEBRA. (6 credits; Prerequisite: 189-371D or equivalent). The rudiments of category theory, including adjoint functors; noetherian, artinian and semi-simple rings; representations of finite groups; a continuation of commutative algebra, prime ideals, localisation and completion; some algebraic number theory and a deeper study of field extensions.
Professor Sussman

189-572D REAL AND COMPLEX ANALYSIS. (8 credits; Prerequisites: 189-250A,B, -251A,B, -372D). The theory of measure and integration, basic Hilbert and Banach space theory, complex analysis from a modern viewpoint.
Professor Drury

189-574A ORDINARY DIFFERENTIAL EQUATIONS. (3 credits; Prerequisite: 189-374D). Topics to be selected from the following: existence and uniqueness theorems, dependence of solutions on parameter and initial data, stability theory, perturbation methods, singular points, periodic systems, two point boundary-value problems.
Professor Langford

189-575B PARTIAL DIFFERENTIAL EQUATIONS. (3 credits; Prerequisite: 189-374D). *Not given in 1976-77.* A continuation of topics introduced in 189-374D.

189-578A NUMERICAL ANALYSIS. (3 credits; Prerequisite: 189-372D). Basic error analysis; numerical solutions of nonlinear equations; interpolation; numerical integration and numerical solutions of ordinary differential equations.
Professor Evans

189-579B NUMERICAL ANALYSIS. (3 credits; Prerequisites: 189-250A,B, -251A,B). *Not given in 1976-77.* Basic linear algebra, spectral radius, vector and matrix norms. Numerical linear algebra, solution of linear systems by direct and iterative methods, least squares solutions, computation of eigenvalues and eigenvectors, ill-conditioned systems. Solution of nonlinear systems of equations, Banach's fixed point theorem. Polynomial approximation, least-squares and uniform approximation. Boundary-value problems for different equations.

189-581D DIFFERENTIAL GEOMETRY. (6 credits; Prerequisite: 189-380D). *Not given in 1976-77.* The geometry of differentiable manifolds.

189-583A TOPOLOGICAL SPACES. (3 credits). Bases, connectedness, convergence, product and quotient spaces, metrization, compactness, function spaces.
Professor Rattray

189-585A INTEGRAL EQUATIONS AND TRANSFORMS. (3 credits). Introduction to the theory of Hilbert spaces. Fredholm and Volterra integral equations; exact and approximate solutions. Equations with Hermitian kernels. Hilbert Schmidt theorem and consequences. Representation formulas for the solutions of initial and boundary value problems. Green's functions. Integral Transforms. Applications.
Professor Roth

189-586B ADVANCED BOUNDARY AND INITIAL VALUE PROBLEMS. (3 credits; Prerequisites: 189-316B, -374D, or equivalent). Partial differential equations of applied mathematics. Dirichlet and Neumann problems: complex variable methods. Homogeneous and non-homogeneous problems: Green's functions, integral transform methods, variational techniques. Perturbation theory. Application.

189-587D ADVANCED PROBABILITY THEORY. (6 credits; Prerequisite: 189-356A or equivalent). Distribution functions on R^1. Basic measure and integration theory, with special reference to probability measures on (R^1, B^1) and their correspondence with distribution functions. Random variables. Expectation, including basic inequalities. Independence. Conditional probability. Convergence concepts, laws of large numbers. Characteristic functions. Central limit theorem and its ramifications. Random walks.
Professor Taylor

189-588D ALGEBRAIC TOPOLOGY. (6 credits). *Not given in 1976-77.* Introduction to homology and homotopy theory.

METEOROLOGY (195)

Professors — SVENN ORVIG *(Chairman);* W.F. HITSCHFELD; J.S. MARSHALL; R.R. ROGERS

Associate Professors — J. F. DEROME; P. E. MERILEES; E. VOWINCKEL

Assistant Professor — H. G. LEIGHTON
Special Lecturer — R. W. DALEY

Burnside Hall, Room 722,
Telephone, 392-4461.

Meteorology is the study of the earth's atmosphere from the ground up to the heights where it fades into interplanetary space. Most of this atmosphere (80 per cent by mass) is within about 40,000 feet of the surface, and it is here that much of the familiar "weather" occurs; above this height lies the stratosphere, where there still are winds and pressure-patterns, but clouds and up-and-down currents of air are scarce. The atmosphere can be studied as a large ocean of gas by the methods of fluid dynamics; winds, temperature fronts, and planetary waves are the ideas involved in such a program. Or it can be studied from the point of view of its detailed physics: how cloud droplets make rain, or how sunlight warms the ground, and the ground warms the air above it by radiation and convection.

Meteorology is not weather-forecasting, though forecasting is one of the objectives of meteorology. The point of view is always quantitative; meteorology is physics, and like other parts of physics it attempts to devise theoretical models of its complex subject, of the motion and composition of the air, and of its interaction with radiation and the solid or liquid surface.

Meteorology is a good subject when coupled with an approved sequence in mathematics and physics. The program may lead to a B.Sc. with a Major in Meteorology.

In the Honours program in Meteorology there are various options, depending on the student's particular interests. It is, in all cases, a rigorous and specialized study of the theory and practice of meteorology.

Graduates in Honours Meteorology and in Honours Physics, Mathematics, or equivalent courses, can become professional meteorologists through the training offered in the M.Sc. program in Meteorology. Good facilities exist for Ph.D. studies in several areas of current meteorological research.

Graduates who have a Major in Meteorology often find employment in applied work.

FACULTY PROGRAMS

For details, see Faculty Programs, page

MAJOR IN METEOROLOGY

Consult Professor Rogers, Burnside Hall, Room 817.

In view of the fact that meteorology is the physics and mathematics of the atmosphere, the Department will recognize a course of study as a "Major Program in Meteorology" if, in addition to the full sequence of general meteorology courses (195-210D, -320A, -321B, -410A, -411B and -420D), it contains the equivalent of the following program in Physics and Mathematics:

Mathematics 189-223A, -222A,B, -314A,B, -315A,B; Physics 198-231A,B, -232A,B. -233A; Computer Science 308-200B, plus additional approved courses in Mathematics and Physics. In total, 57 credits are specified, of which 51 are compulsory. The details of the program are available in the Department.

HONOURS IN METEOROLOGY

Consult Professor Derome, Burnside Hall, Room 711.

Prerequisite: High standing in Mathematics and Physics. An advanced program in Physics and Mathematics, with Meteorology courses from those listed below under "Course descriptions". There are three options: Dynamic, Physical and Climatology Meteorology. All of these require the same program in the U1 year (30 credits of which 28 are compulsory and 2 are elective.) The U2 and U3 years are different in the three options. In all options the U3 year will concentrate on the 600-level courses given in the Meteorology Department.

U1: Mathematics 189-247A, -248A, -249B, -325B; Physics 198-251A, -252A, -261B, -262B; Meteorology 195-210D; 2 credits are elective.

Physical Meteorology Option

U2: Mathematics 189-356A; Physics 198-353D, -355A; Computer Science 308-200A,B; Meteorology 195-410A, -411B, -420D; 5 credits are elective.

U3: Physics 198-328A,B, -329A,B; Meteorology 195-651D, -653D, -655D, -656D; Plus 3 approved credits; 6 credits are elective.

Dynamic Meteorology Option

U2: Mathematics 189-356A, -357B; Physics 198-351A, -353D, -355A; Computer Science 308-200A,B; Meteorology 195-320A, -321B; 5 credits are elective.

U3: Mathematics 189-317A; Meteorology 195-652D, -653D, -654D, -655D, -656D; 7 credits are elective.

Climatology Option

U2: Mathematics 189-356A, -357B; Physics 198-353D; Computer Science 308-200A,B; Geography 183-324B; Meteorology 195-320A, -321B; Plus 3 approved credits; 5 credits are elective.

U3: Mathematics 189-317A; Meteorology 195-652D, -653D, -654D, -655D, -656D; 7 credits are elective.

COURSE DESCRIPTIONS

195-210D GENERAL METEOROLOGY. (6 credits; 1 lecture and tutorials). History, instruments and data. Simple and complex climatic elements; world, regional and local climates. Physical properties of the atmosphere; thermodynamics; humidity, clouds and precipitation. Local and major wind systems. Fronts and air masses. Synoptic analysis and principles of weather forecasting.
Professors Orvig and Leighton

195-320A INTRODUCTORY ATMOSPHERIC PHYSICS. (3 credits; 3 hours lectures; Prerequisite: Permission of instructor). Classical thermodynamics applied to atmospheric air. Water vapor and its thermodynamic effects. Solar and terrestrial radiation. Heat budget of earth and atmosphere. Diffusion and turbulent transfer of heat and matter in the atmosphere.
Professors Rogers and Leighton

195-321B CLOUD PHYSICS. (3 credits; 3 hours lectures; Prerequisite: Meteorology 195-320A). Atmospheric stability and convection. Nucleation of water and ice. Growth of cloud droplets and the development of precipitation. Structure of clouds and rain, methods of observation.
Professors Leighton and Rogers

195-410A DYNAMIC METEOROLOGY I. (3 credits; 3 hours lectures; Prerequisites: Mathematics 314A and 315B; Meteorology 320A, 321B or permission of instructor). Momentum equations in rotating coordinates, geostrophic flow, steady curved flow. The vertical structure of wind and pressure systems. The circulation theorem and vorticity equation. Pressure as the vertical coordinate. Analysis of synoptic scale motions in middle latitudes.
Professor Merilees

195-411B DYNAMIC METEOROLOGY II. (3 credits; 3 hours lectures; Prerequisite: Meteorology 410A). Atmospheric oscillations: sound waves, gravity-inertia waves and Rossby waves. Origin of middle-latitude waves: barotropic and baroclinic instability mechanisms. Energy transformations in the atmosphere. Finite difference methods applied to the solution of nonlinear atmospheric models.
Professor Merilees

195-420D INTRODUCTORY SYNOPTIC METEOROLOGY. (6 credits; 1 hour lecture; 2 hours laboratory; Prerequisite: Meteorology 320A, 321B; Corequisite: Meteorology 410A and 411B or permission of instructor). An introduction to meteorological analysis. Effects of boundary layer processes on large-scale energetics of the atmosphere. Diagnostic studies of the development of weather systems. The general circulation. Practical analysis of weather charts. Graphical and computer methods.
Professor Derome

195-651D* PHYSICAL METEOROLOGY. (6 credits; 2 hours). Thermodynamics of the atmosphere. Instability and convection. Cloud physics and storm structure. Radar applications. Solar and terrestrial radiation. Radiation calculations and diagrams. Energy budget of the atmosphere.
Professors Rogers and Leighton

195-652D* DYNAMIC AND NUMERICAL METEOROLOGY. (6 credits; 2 hours). The equations of motion. Circulation and vorticity, development theorems. Linear perturbations, instability. Mathematical models of the atmosphere; application of difference equations and their numerical solution.
Professors Derome, Merilees and Dr. Daley

195-653* CLIMATOLOGY. (3 credits; 1 hour). The general circulation of the atmosphere and the ocean. Climatic classification. The heat and water balance, climatic change.
Professor Orvig

195-654D* SYNOPTIC METEOROLOGY. (6 credits; 4 hours). A laboratory course to complement Meteorology 651 to 653. Analysis of weather charts and diagrams, forecast techniques, diagnostic treatments of atmospheric dynamics and weather processes. Modern statistical and computer methods are used wherever suitable.
Professor Vowinckel and Staff

195-655D* SEMINARS "TOPICS IN METEOROLOGY". (3 credits; 1 hour). One-hour discussions on special topics in meteorology, e.g. lightning studies, meteorology and microwave communication, remote sensing, limits of predictability.
Staff

195-656D* DAILY WEATHER DISCUSSION. (2 credits; 2-1/2 hours). One-half hour briefing on the current weather situation.
Professor Vowinckel

*Restricted to Graduate students and final-year Honours Meteorology students. Others by special permission.

MICROBIOLOGY AND IMMUNOLOGY (528)

Professors — S.I. VAS *(Chairman);* B.H. MATHESON; J.W. STEVENSON; W. YAPHE
Associate Professors — Z. ALI-KHAN; C.A. BUTAS, E.C.S. CHAN; P.M. COOKE; J. DE VRIES; P. GILL; R. HAND; L. KAPICA: *C.H. PAI; *G.K. RICHARDS; H.G. ROBSON; R. SIBOO
Assistant Professors — A.F. DOSS; I.B. FABRIKANT; *J. GORDON; *E. MANKIEWICZ; *M. MARKS; L. MARTINEZ *J.L. MEAKINS; *M. MARKS; *J. MENDELSON
Lecturers — *M. BLANC; *S. NOMMIK
Demonstrator — C. SHAW
Teaching Assistants — D. CRISTEANU; L. THERRIEN
Associate Members — *R.D. GUTTMANN; *C.K. OSTERLAND
**Part-time*

Pathological Institute, 3775 University Street, Room 515, Telephone: 842-1251, ext. 1771.

Microbiology is the study of minute forms of life, which are best examined using a light or electron microscope. It is one of the youngest sciences, despite the fact that the simplest microscope was invented over three hundred years ago, and the existence of microbes was suspected long before that. In its relatively short history, however, microbiology has had tremendous impact in such varied fields as medicine, agriculture, genetics, forestry and industry.

The main groups of microorganisms are the bacteria, protozoa, fungi and viruses, which are now included under the broad term "microbiology." These organisms, although so small as to be measured in thousandths of a millimeter have characteristic structures and life habits. Many of their complex chemical, physical and genetic properties are shared with man and other higher organisms. Because of their rapid growth rate, they are widely used as "experimental animals" in studying cell processes. Microorganisms of all kinds are widespread in man's environment and are important in his everyday life in many ways. Some cause diseases of plants, animals or man; others are useful in bread-making, brewing, ripening of cheese, wine-making, manufacture of vaccines, antibiotics, and pure chemicals; some are the cause of food spoilage; and still others are of vital importance in maintaining soil fertility or in the control of forest insect pests.

Opportunities for careers in pure or applied microbiology are many and varied. For interested students, the following introductory reading is suggested:

Postgate, *Microbes and Man* (Penguin, 1969)
Camus, *The Plague* (Penguin)
Sistrom, *Microbial Life* (Holt Rinehart & Winston Inc, 1969)

FACULTY PROGRAM

For details, See Faculty Programs, page

MAJOR PROGRAM

The following courses are required to complete a Major program in Microbiology and Immunology.

U1: 31 credits: Biology 177-201D, -205D, -206D; Mathematics 189-231A,B; Chemistry 180-204A, -222A,B; Physiology 552-211D.

U2: 22 credits: Biology 177-301A,B, -302A,B, -314A; Microbiology 528-311A, -314B, -313B or 315B; one of the following: Biology 177-309A, -373A; Mathematics 189-232A,B; Psychology 204-204A,B.

U3: 13 credits: Microbiology 528-313B or 315B, -422A, -423A, -424A.

Consult: Dr. P. Gill, Room 406, Pathological Institute, 3775 University Street. Telephone 842-1251, Ext. 1771.

HONOURS PROGRAM

The Honours program is a rigid one and intended for those students planning to enter graduate study after completion of the B.Sc. No student will be admitted to the Honours program until U-2. Students hoping to be admitted to Honours in U-2 should follow the U-1 Major program and must obtain a GPA of 3.00 for admission. For continuing in Honours a GPA of 3.10 must be obtained in U-2.

The following courses are required in U-2 and U-3 to complete the Honours program:

U2: Biology 177-301A,B, -302A,B, -314A, -310B; Microbiology 528-311A, -314B, 313B or 315B; Anatomy 504-261A; one of: Biology 177-309A, -373A; Mathematics 189-232A,B; Psychology 204-204A,B.

U3: Microbiology 528-313B or 315B, -422A, -423A, -424A, -471A, -472B, -501D, -525B, -527B.

Total credits over 3 years: 92

Consult: Dr. P. Gill, Room 406, Pathological Institute, 3775 University Street. Telephone: 842-1231, Ext. 1771.

INTERDEPARTMENTAL HONOURS IN IMMUNOLOGY

The Departments of Biochemistry, Microbiology and Immunology and Physiology are offering an interdepartmental Honours program in Immunology.

Details of this program may be found on page 172 of the Announcement.

COURSE DESCRIPTIONS

528-311A BIOLOGY OF MICROORGANISMS. (4 credits; Prerequisites: Biology 177-201D, 205D, 206D or by permission of the Department; 3 hours lectures, 3 hours laboratory). A general treatment of introductory microbiology bearing specifically on the biological properties of microorganisms. The laboratory sessions introduce general techniques peculiar to the handling of microorganisms.

528-313B PARASITOLOGY. (3 credits; Prerequisite: Microbiology 528-311A. Open to Microbiology students or by permission of the Department; 2 hours lecture, 3 hours laboratory every other week). *Alternate years. Not offered in 1976-77.* A study of the biology, bionomics, epidemiology, pathogenicity and diagnosis of the parasites of man. Laboratory will consist of a lecture on techniques, demonstrations and practical work.

528-314B IMMUNOBIOLOGY. (3 credits; Prerequisite: Biology 177-201D or by permission of the Department; 3 hours lectures). A comprehensive study of the fundamental principles of immunobiology.

528-315B THE PATHOGENIC FUNGI. (3 credits; Prerequisite: Microbiology 528-311A. Open to Microbiology students or by permission of the Department; 2 hours lectures, 3 hours laboratory every other week). *Alternate years, offered in 1976-77.* A study of the morphological, cultural and physiological characteristics of the pathogenic fungi, their pathogenic activities and the etiology and epidemiology of fungus diseases of importance in human and veterinary medicine.

528-422A. PATHOGENIC BACTERIA. (4 credits; Prerequisites: Microbiology 528-311A, 314B; open to Microbiology students or by permission of the Department; 3 hours lectures, 3 hours labs). A systematic survey of the major groups of pathogenic bacteria emphasizing principles of taxonomy, mechanisms of pathogenicity, modes of transmission, and control.

528-423A MICROBIAL PHYSIOLOGY. (3 credits; Prerequisite: Microbiology 528-311A; open to Microbiology students or by permission of the Department. 3 hours lectures). A broad introduction to the physiology of microorganisms. The chemical activities of microbes will be studied from a basic knowledge of microbiology and biochemistry.

528-424A FUNDAMENTAL VIROLOGY. (3 credits; Prerequisite: Microbiology 528-311A; open to Microbiology students or by permission of the Department. 3 hours lectures). A study of the fundamental properties of viruses (bacterial, plant and animal) and their interaction with host cells. Emphasis will be on phenomena occuring at the cellular level.

528-471A CURRENT TOPICS IN MICROBIOLOGY AND IMMUNOLOGY. (3 credits; open only to U3 Honours students). Seminars and discussions on current topics in Microbiology and immunology.

528-472B CURRENT TOPICS IN MICROBIOLOGY AND IMMUNOLOGY. (3 credits; open only to U3 Honours students). Seminars and discussions on current topics in Microbiology and Immunology.

528-501D ADVANCED MICROBIOLOGICAL TECHNIQUES. (6 credits; open only to selected U3 Honours students; 2 hours lectures, 6 hours laboratory). A laboratory course on advanced techniques and instrumentation used in Microbiology. The laboratory periods will consist of fundamental experiments in Microbial Physiology, Immunology and Virology.

528-525B PATHOGENIC VIRUSES. (3 credits; Prerequisite: Microbiology 528-424A; open only to U3 Microbiology Honours students or by permission of the Department; 3 hours lecture). A study of the properties and activities of the major groups of mammalian viruses and the epidemiology of viral infections.

528-527B INFECTIOUS IMMUNOLOGY. (3 credits; open only to U3 Honours students or by permission of the Department, 2 hours lectures, 3 hours laboratory). A comprehensive study of immunity in infectious diseases emphasizing the mechanisms of host resistance, immunodeficiency, immunoprophylaxis, adverse immune reactions and sero-diagnostic techniques.

PATHOLOGY (546)

546-300A PRINCIPLES OF DISEASE. (3 credits; Prerequisite: A university-level general biology course; not open to U1 students). An introduction to the study of diseases with emphasis on changes in normal structure and function and thier causes at the host, tissue and cellular level. Students are expected to participate in seminars and a major paper is required.
Professor H. Sheldon

PHARMACOLOGY AND THERAPEUTICS (549)

549-461D GENERAL PHARMACOLOGY. (6 credits; Prerequisite: Suitable preparation in biochemistry and physiology and permission of the Department). A course covering basic interactions between chemical agents and living processes.

PHYSICS (198)

Professors — C.S. LAM, *(Chairman);* R.E. BELL; A.P. CONTOGOURIS, F.T. HEDGECOCK; W. HITSCHFELD; M.P. LANGLEBEN; B. MARGOLIS; S-K MARK; J.S. MARSHALL; W.M. MARTIN *(Assistant Chairman);* E.R. POUNDER; J.M ROBSON (on leave); R.T. SHARP; D.G. STAIRS; E.J. STANSBURY; R. STEVENSON; P.R. WALLACE; M.J. ZUCKERMANN
Visiting Professor — G.A. WOONTON
Associate Professors — J.R. ADDISON; G.L. AUSTIN; J.E. CRAWFORD; S. DAS GUPTA; R. HARRIS; R. HENZI; J.E. KITCHING (on leave); J.K.-P. LEE; J.F. MATHISON; R.B. MOORE; T.F. MORRIS; W.B. MUIR; (on leave), P.M. PATEL; (on leave), D.G. RYAN; J.O. STROM-OLSEN; N. de TAKACSY; J.M. TRISCHUK; (on leave) D. WALSH
Visiting Associate Professor — A.I. McPHERSON
Assistant Professors —
Lecturer — L. LESSARD
Honorary Lecturer — P.C. LANDRY *(Faculty of Education)*
Readers — R.W. COCHRANE; M. LAFLEUR
Curator, Rutherford Museum — F.R. TERROUX

Macdonald Physics Building, Room 105,
Telephone: 392-5130.

Physics is in many ways the parent of the other natural sciences and its discoveries and laws continually affect their development. Its range and scope extend in space and time froms subnuclear particles to the universe itself. The subfields of physics such as mechanics such as mechanics, thermodynam-

ics, electricity, atomic physics and quantum mechanics, to mention but a few, permeate all other scientific disciplines.

There are two main undergraduate programs in Physics at McGill: the Major and the Honours. The Major program offers a broad training in classical and modern physics and yet leaves room for the student to take a meaningful sequence of courses in two other areas. Flexibility and accessibility are two features of the Major program. The Honours program is more highly specialized and the courses are more demanding. High standing in collegial mathematics and physics is a requirement for admission. The Honours program is appropriate for students who wish to make an in-depth study of the subject in preparation for graduate work and an academic or professional career.

For students lacking some of the college level courses in physics and for students wishing to transfer into Physical Sciences after completing a collegial program in another area the Department offers transitional courses in its -100 series.

Many aspects of physics permeate other scientific fields, and people trained in physics are employed in industry, government, and educational systems where they find many challenges as teachers, researchers, administrators and in the rapidly developing area of scientific business.

PROGRAM INFORMATION

Students wishing to register in one of the undergraduate programs of the Department must consult with the Department and obtain the appropriate Study Plan Form from Professor W.M. Martin (392-5129), Macdonald Physics Building, Room 106 or Professor M.P. Langleben (392-5127), Macdonald Physics Building, Room 60.

They will then be assigned an Academic Adviser from the Staff of the Department as follows:

U1 Honours	**Professor Lam**
U2 Honours	**Professor Ström-Olsen**
U3 Honours	**Professor Henzi**
U1 Major	**Professor Harris**
U2 Major	**Professor de Takacsy**
U3 Major	**Professor Trischuk**
Faculty Programs	**Professor Langleben**

High standing in Mathematics and Physics and satisfactory performance in a placement examination are required for admission to Honours. The placement examination is held about seven days after the commencement of lectures. Students may register in Honours after they have obtained provisional Honours forms from the Department. This registration will be confirmed if they succeed in the placement examination.

SCIENCE FRESHMAN PROGRAM

The courses 198-101A,B, and -102A,B are intended for students wishing to proceed in Biological Science but lacking one or more of the elements of the CEGEP program in Health Sciences. Similarly courses 198-120A,B, -121A,B, -122A,B are intended for students who wish to proceed in Physical Sciences but who lack some of the prerequisites. Finally 198-110A is intended for students who have satisfactorily completed the CEGEP Health Sciences sequences and who now wish to proceed in Physical Sciences.

HONOURS PROGRAM

In addition to a sufficient number of electives, the Department prescribes a total of 75 credits distributed over the three years as follows:

U1: Mathematics 189-247A, -248A, -249B, -325B; Physics 198-251A, -252A, -259D, -261B, -262B. 25 credits.

U2: Physics 198-328A, -329A, -351A, -353D, -355A, -357D, -359B, -365B. 26 credits.

U3: Physics 198-459D, -551A, -562A and four of: Physics 198-454A, -514B, -557A, -558A, -567B, -572B; Mathematics 189-360B or other approved 3-credit courses. 24 credits.

NOTE: Mathematics 189-360B is a recommended option for Honours Physics students in either the U2 or U3 year. This course is normally offered in alternate years.

A student whose average in the *required* courses in any year falls below GPA 2.8, or whose mark in any individual *required* course falls below 55% may not register in the Honours program the following year except with the permission of the Department.

MAJOR PROGRAM

The Department's requirements, in addition to a sufficient number of electives are:

A) A core of 40 credits as follows: Mathematics 189-222A,B, -223A, -315A,B; Physics 198-231A,B, -232A,B, -233A, -235B, -328A, -329A, -346D, -432A, -439A,B

B) 15 credits chosen from the following list: Geological Sciences 186-504B; Mathematics 189-314A,B, -316B, -317A, -319B; Physics 198-214B, -219A, -314A, -331A, -334B, -337B, -341B, -413A, -431A, -434A, -434B, -437B, -438B; -449B; Computing Science 308-200A,B; one approved course 3 credits, not listed above.

Mathematics 189-222A,B, -223A, -315A,B and Physics 198-235B must be completed in U1. While the other courses may be taken at any time subject to prerequisite conditions, it is strongly recommended that they be taken in the year indicated by the course number.

C) Students who wish to place more emphasis on laboratory work and to undertake laboratory projects, and who complete the electronics course in the Fall term of their U2 year, may then take 198-359B in the Winter term and 198-459D in their U3 year, providing sufficient equipment is available.

MAJOR IN PHYSIOLOGY AND PHYSICS

See Department of Physiology, page 189.

FACULTY PROGRAMS

For details, see Faculty Programs, page 162.

COURSE DESCRIPTIONS

NOTE: Honours courses are indicated when the fifth character of the six digit course number is 5 or 6.

198-101A,B GENERAL PHYSICS FOR BIOLOGICAL SCIENCES AND PRE-MEDICAL STUDENTS. (4 credits; 3 hours lectures; 2 hours laboratory). The object of this course is to give the students a basic understanding of the principles of physics, illustrating these, where possible, with current examples of their use in biology and medicine.
Professor Mathison *et al*

198-102A,B ELECTROMAGNETISM FOR BIOLOGICAL SCIENCES AND PRE-MEDICAL STUDENTS. (4 credits; 3 hours lectures; 2 hours laboratory; Prerequisite: 198-101; Corequisite: 189-120). Electric field and potential. D.C. circuits and measurements. Capacitance. Magnetic field and induction. Semiconductor devices and their application. Feedback and control systems. Electromagnetic waves.

These courses, 101A,B and 102A,B together satisfy:

a) physics requirements for Medical School;
b) minimum B.Sc. requirements for post-matriculation physics.

Professor Mathison *et al*

198-110A MECHANICS AND ELECTROMAGNETISM. (3 credits; 3 hours lectures). This course is intended for those students who have completed nine collegial credits of physics in Health Sciences or the equivalent and now wish to transfer into Physical Sciences or Engineering at McGill. It includes the elements of mechanics and electromagnetism treated with the use of calculus.
Professor

198-120A,B WAVES, OPTICS. (3 credits; 3 hours lectures, 3 hours laboratory in alternate weeks; Corequisites: 189-120, 198-121). Wave phenomena and optics.
Professor Patel and Staff

198-121A,B MECHANICS. (3 credits; 3 hours lectures, 3 hours laboratory in alternate weeks; Corequisite: 189-120). The basic laws and principles of mechanics — a mathematical treatment.
Professor

198-122A,B ELECTRICITY AND MAGNETISM. (3 credits; 3 hours lectures, 3 hours laboratory in alternate weeks; Prerequisite: 198-121, 189-121). The basic laws of electromagnetism; electrical measurements; direct current circuits.
Professor

198-200D IDEAS AND CONCEPTS OF MODERN PHYSICS (6 credits, three hours lectures; permission of instructor is necessary for enrolment in this course. Science students must also have permission of the Adviser. See 'Science Courses for Arts Students'). This course will attempt to give the non-specialist an introduction to the conceptual structure of modern physics (since Clerk Maxwell) and will deal with the following topics; the concept of fields as introduced by Maxwell in electromagnerism; the evolution of thermodynamics and the statistical description of matter, the direction of time, order and disorder; the evolution of the restricted and general theories of relativity, new ideas of time, the introduction of the quantum hypothesis and its development, wave and particle characteristics of matter, uncertainty principle; the quantum interpretation of matter, of nuclei and of fundamental particles, the role of symmetries and conservation laws; the evolution of the physicist's picture of the cosmos, 'big-bang' vs steady state theories, stars and galaxies, stellar collapse, pulsars and black holes. The impact of changing models of the physical world and the new concepts involved on contemporary thought.
Professor Wallace

198-214B ASTROPHYSICS. (3 credits). An introduction to astronomy and astrophysics with emphasis placed on methods of observations. Astronomy of time and position; solar system; stars; stellar structure and evolution, galaxies.
Professor Moore

198-217B PHYSICS AND THE LIFE SCIENCES. (3 credits, 3 hours lectures; Prerequisites: Biological Sciences CEGEP certificate or permission of instructor). The examination of biological material using radiation including optical and electron microscopy. X-ray and neutron crystallography, radiation measurements in biological matter.
Professor Moore

198-219A STATISTICAL TREATMENT OF EXPERIMENTAL DATA. (3 credits; 3 hours lectures). Errors in physical measurement. Probability distributions. Fitting of experimental data. Design of experiments.
Professor Langleben

198-224B PHYSICS OF MUSIC. (3 credits; 2 hours, conference 1 hour). An introductory course requiring little mathematical background. Topics include harmonic motion, waveforms and wave motion; vibrating strings and air columns; loudness, pitch and timbre; selected string, woodwind, brass, percussion and keyboard instruments; dissonance and scales; recording and reproduction of music; acoustics.
Professor

198-231A,B MECHANICS. (4 credits; 3 hours lectures, laboratory alternate weeks; *Text:* Skinner, *Mechanics).* Kinematics. Newton's Laws. Conservation Laws and Symmetry Principles. Two-body

Problems. Motion of a Rigid Body. Oscillating Systems. Lagrange's Equations.
Professor Crawford

198-232A,B ELECTRICITY AND MAGNETISM. (4 credits; 3 hours lectures, laboratory alternate weeks). Electrical measurements; network theorems, resonant circuits, nonsinusoidal waves; semiconductors and modern devices. Electric and magnetic properties of matter. Electromagnetic theory, propagation of electromagnetic waves.
Professors Martin and Hedgcock

198-233A THERMAL PHYSICS. (4 credits; 3 hours lectures, laboratory alternate weeks). Temperature, heat, work, first law of thermodynamics, kinetic theory. The second law of thermodynamics, statistical mechanics, probability distributions.
Dr. Cochrane

198-235B MATHEMATICAL PHYSICS. (3 credits; 3 hours lecture; Prerequisite: Mathematics 189-223A; Corequisite: Mathematics 189-315B). Harmonic motion of simple and continuous systems with examples from mechanics and from electrical circuits; the motion of "imperfect" or perturbed systems; linear response; the discussion of heat flow, fluid flow, and electrical conductivity in two dimensional systems.
Professor Harris

198-251A CLASSICAL MECHANICS I. (3 credits; 3 hours lectures). Kinematics. Conservation of energy; heat. Conservation of momentum. Lagrange's equations. Angular motion. Oscillators. Special relativity.
Professor Pounder

198-252A ELECTRICITY & MAGNETISM. (2 credits; 2 hours lectures). Electric and magnetic fields; dielectrics and magnetic materials; work and field energy; Maxwell's equations.
Professor Sharp

198-259D LABORATORY. (3 credits).
Dr. Lafleur *et al*

198-261B CLASSICAL MECHANICS II. (2 credits; 2 hours lectures). Rigid bodies. Deformations. Generalized coordinates. Lagrangian Mechanics. Principle of least action. Hamiltonians.
Professor Pounder

198-262B ELECTRICITY & MAGNETISM. (3 credits; 3 hours lectures). Magnetism as a relativistic effect; electromagnetic waves; reflection of light waves; dipole radiation; Rayleigh scattering; motion of charged particles in electric and magnetic fields; introduction to physical and geometrical optics.
Professor Sharp

198-309A DESCRIPTIVE PHYSICAL OCEANOGRAPHY. (3 credits; Prerequisites: Mathematics 189-120A,B and 121A,B). Properties of sea water. Time and space distribution of ocean properties. Water masses and currents.
Professor D'Anglejan (Marine Sciences)

198-314A ASTROPHYSICS II. (3 credits; 3 hours lectures; Prerequisite: Physics 198-214B). Topics introduced in 198-214B are treated in more detail and depth. Stellar spectra and classification; Saha ionization formula; introduction to theory of stellar atmospheres; equations of stellar structure and the mass-luminosity relation; nuclear energy generation; the Hertzsprung-Russell diagram.
Professor de Takacsy

198-319B DYNAMIC OCEANOGRAPHY. (3 credits; Prerequisites: Physics 198-309A, 198-231A). Equations of motion, geostrophy, diffusive processes, boundary layers, wind-driven circulation, thermohaline circulation, gravity waves, Kelvin waves, tides in oceans and estuaries, general field techniques.
Professor Ingram (Marine Sciences)

198-328A ELECTRONICS FOR PHYSICISTS. (3 credits; 3 hours lectures; Prerequisite: Physics 198-232A,B; Corequisite: Physics 198-329A). Introduction to solid state devices. Amplifiers, feedback, digital circuits. Examples from modern instrumentation.
Professor Addison

198-329A ELECTRONICS LABORATORY. (1 credit; 3 hours; Corequisite: Physics 198-328A).

198-331A CLASSICAL MECHANICS. (3 credits; 3 hours lectures; Prerequisite: Physics 198-231A,B). Special relativity; Lorentz transformations, 4 vectors, 4 momenta, relativistic kinematics; mechanics, generalized coordinates, Lagrange equations, Hamiltonians, rigid bodies; small oscillations, coupled oscillators, waves. (Knowledge of computing methods is advisable).
Dr. Lessard

198-334B TOPICS IN APPLIED PHYSICS. (3 credits; 3 hours lectures; Prerequisites: Physics 198-231A,B, -232A,B). Waves and resonances in physical systems; superposition, interference and diffraction; examples from mechanics, electronics, geophysics. Information theory: band widths, signal to noise ratio; examples from communications. Plane wave transmission. Matter waves in solid earth, oceans and atmosphere; acoustic waves.
Professor Austin

198-337B NUCLEAR ENERGY AND ITS APPLICATIONS. (3 credits; 3 hours lectures). Concepts of nuclear structure with emphasis towards the understanding of nuclear energy sources. Neutron Physics. Fission. Neutron cycle in a reactor, and criticality. Slowing down and diffusion of neutrons. Elementary reactor theory. Critical size. Shielding. Breeding. Comparison of various nuclear power systems. Uses of radioisotopes. (Not open to students who have taken 198-237B).
Professor Martin

198-339B ELECTRONICS FOR CHEMISTS. This course is suitable for other Physical Science and Biological Science students as well. (4 credits; 3

hours lectures, 3 hours laboratory alternate weeks; Prerequisite: Physics 232A,B). Semi-conductor diodes and transistors, transistor amplifiers; circuits with feedback. Pulse circuits, and pulse logic.
Professor Ryan

198-341B STATISTICAL MECHANICS. (3 credits; 3 hours lectures; Prerequisites: 198-231A,B 233A). Ideal gases, density of states, quantum statistics, Bose-Einstein gas, Fermi-Dirac gas, degeneracy, interacting gases, radiation, fluctuations.
Professor Stevenson

198-346D QUANTUM PHYSICS. (6 credits; 3 hours lectures; Prerequisite: Physics 198-231A,B). Experimental origins of quantum mechanics. Basic postulates. Uncertainty principle; measurement. The Schroedinger equation, eigensolutions, the harmonic oscillator, angular momentum, matrix mechanics. Identical particles, the exclusion principles, spin, statistics. The hydrogen atom.
Professor Das Gupta

198-351A CLASSICAL MECHANICS. (3 credits, 3 hours lectures). Lagrangian mechanics; Variational methods and Hamiltonian mechanics; transformation theory and the Hamilton-Jacobi equation. Small vibrations treated first in matrix form as an eigenvalue problem. Group theory and symmetry classification of eigenvectors and eigenvalues.
Professor Margolis

198-353D THERMAL PHYSICS. (4 credits; 2 hours lectures). Topics in thermodynamics and statistical mechanics. The laws of thermodynamics; thermodynamic variables and relations. Entropy, free energy, enthalpy, partition functions. Phase changes, Clausius-Clapeyron equation. Applications to physical systems; free particles, ideal gas. Fermi gas, photons, phonons, bosons.
Professor Addison

198-355A MATHEMATICAL PHYSICS I. (3 credits; 3 hours). Application of mathematical methods in physics. Vectors in 3-space; Fourier analysis; complex analysis; differential equations of mathematical physics; eigenvalue problems
Professor Henzi

198-357D QUANTUM PHYSICS. (6 credits; 3 hours lectures). Classical electron theory. Quantum Theory of the electron. One-electron problems. Several-electron problems. Radiation from an atom.
Professor Mark

198-359B LABORATORY. (3 credits; 4 hours). A laboratory in general physics for Honours students.
Professor Ström-Olsen and Staff

198-365B MATHEMATICAL PHYSICS II. (3 credits; 3 hours; Prerequisite: Mathematical Physics I). Three dimensional waves, boundary conditions, use of special functions. Green's functions, applications to scattering, diffusion and heat conduction; stochastic processes, probability distributions, applications to radioactive decay, diffusion, energy distributions and fluctuations.
Professor de Takacsy

198-413A TOPICS IN THE PHYSICAL BASIS OF PHYSIOLOGY. (3 credits; 3 hours lectures; for Majors in Physics, Chemistry, Mathematics or Physiology and Physics or the permission of the instructor). The physical basis for the operation of cells (neurons) in the peripheral and central nervous system. We will examine the forces responsible for transmembrane ion movement and their role in the generation of electrical potentials and anatomical features of neurons responsible for their cable-like electrical behaviour; the mode of transmission of information along this cable-like electrical behaviour; the mode of transmission of information along this cable-like structure and the mechanisms involved in the transmission of information between neurons.
Professor Mackey (Physiology)

198-431A APPROXIMATE METHODS IN QUANTUM MECHANICS. (3 credits; 3 hours lectures; Prerequisite: Physics 198-346D). Approximate solutions of the Schrödinger equation. The Variational Method. Spectral lines, selection rules and perturbation theory.
Professor Wallace

198-432A THEORY AND APPLICATIONS OF ELECTROMAGNETISM. (3 credits; 3 hours lectures; Prerequisite: Physics 198-232A,B). Laplace's equation in electricity and magnetism. Maxwell's equations and wave propagation. Application to transmission lines and antennae.
Professor Das Gupta

198-434B PHYSICAL AND QUANTUM OPTICS. (3 credits; 3 hours lectures; Prerequisite: 198-432A). Geometric optics. Polarization. Lasers, diffraction and coherence. Holography. Scattering. Optical properties of materials.
Dr. Lafleur

198-437B NUCLEAR AND PARTICLE PHYSICS. (3 credits; 3 hours lectures; Corequisite: Physics 198-346D). Simple properties of nuclei and particles. Radioactivity and its applications. Particle interactions with application to astrophysics. Experimental high-energy physics. Accelerators and typical experiments. Quarks.
Professor

198-438B SOLID STATE PHYSICS. (3 credits; 3 hours lectures; Corequisite: Physics 198-346D). Structure of solids. Thermal vibrations in crystals. Electrons in metals, semi-conductors and insulators. Selected topics from magnetism, semi-conducting devices, superconductivity, etc.
Professor Ström-Olsen

198-439A,B LABORATORY. (3 credits; 4 hours laboratory; Prerequisite: Physics 198-328A,B). Prescribed laboratory work.
Professor Ström-Olsen et al

198-449B LABORATORY. (3 credits; 4 hours laboratory; Prerequisite: Physics 198-328A,B, -439A). Supervised project work.
Professor Ström-Olsen and Staff

198-454A OPTICS. (3 credits; 3 hours lectures). Geometrical optics, lenses, electromagnetism and physical optics, diffraction theory, image formation, holography.
Professor Morris

198-459D LABORATORY. (6 credits; 4 hours laboratory). This laboratory will include experiments associated with electromagnetic theory, as well as the optional courses in U3.
Professor Ström-Olsen et al

198-465D MATHEMATICAL PHYSICS FOR CHEMISTS. (4 credits; 2 hours lectures; Prerequisites: Mathematics 189-314A and 315B). Advanced dynamics, including theory of vibrations. Continuous systems. Eigenfunctions and eigenvalues.
Professor Morris

198-514B GENERAL RELATIVITY. (3 credits; 3 hours lectures). Transition from special to general relativity. Non-Euclidian geometry. The basic laws of Physics in co-variant form, Einstein's equations. Newton's theory of gravitation as an approximation. Propagation of gravitation. Rigorous solutions of the field equations. Cosmology.
Professor Henzi

198-551A QUANTUM THEORY. (3 credits; 3 hours lectures). General formulation, scattering theory, WKBJ approximation, time-dependent perturbation, theory and applications, angular momentum, relativistic wave equations.
Professor Stairs

198-557A NUCLEAR PHYSICS. (3 credits; 3 hours lectures). General nuclear properties, nucleon-nucleon interaction and scattering theory, radioactivity, nuclear models, nuclear reactions.
Professor Moore

198-558A SOLID STATE PHYSICS. (3 credits; 3 hours lectures). Properties of crystals, lattice vibrations and thermal properties of insulators, free electron model and band structure, semi-conductors, metals, optical properties.
Professor Harris

198-562A ELECTROMAGNETIC THEORY. (3 credits; Prerequisites: U1 or U2 honours physics, or with permission of instructor). Electrostatics, dielectrics, magnetostatics, time-varying fields, relativity, radiating systems, fields of moving charges.
Professor Morris

198-567B PARTICLE PHYSICS. (3 credits; 3 hours lectures). Basic interactions and symmetries, kinematics, scattering theory, phase space, symmetry and statistics, boson and baryon spectra, experimental techniques.
Professor Stairs

198-572B APPLICATIONS OF ELECTROMAGNETIC THEORY (3 credits; Prerequisite: 198-562A). Scattering processes, wave propagation in various media, wave guides, transmission lines and resonant systems, scalar diffraction theory, plasmas, magnetohydrodynamics.
Professor Morris

PHYSIOLOGY (552)

Professors — J. MILIC-EMILI (Chairman); R.I. BIRKS *(on leave 76-77);* T.M.S. CHANG; B.A. COOPER; P. GOLD; K. KRNJEVIC; F.C. MacINTOSH; G. MELVILL-JONES.

Associate Professors — M.W. COHEN; M.M. FROJMOVIC; V. KLISSOURAS; W.S. LAPP; M. LEVY; M. MACKEY; G. MANDL; G. MISEROCCHI; J.S. OUTERBRIDGE; C. POLOSA; P. SEKELJ; A. WECHSLER.

Assitant Professors — A.W. CHAWLA; L. GLASS; P. KONGSHAVN; K. LUKOWIAK; P. NOBLE; S. POTASHNER; P. WELDON; R.L. WILLIAMS.

Associate Members — R.F.P. CRONIN *(Prof. and Dean Med.)* B.O. DUBROVSKY *(Assoc. Prof. Psychiatry);* H.L. GOLDSMITH *(Prof. Exp. Med.);* C.A. GORESKY *(Prof Med);* D. HORROBIN *(Prof. Med, Univ. Montreal);* P.T. MACKLEM *(Prof. Med),* J.M. McKENZIE *(Prof. Exp. Med.);* M.M. MORRIS *(Assist. Prof. Anesthesia);* G. QUAMME *(Assist. Prof. Exp. Med.)* S. ROSSIGNOL *(Assist. Prof. Univ. of Montreal);* J.F. SEELY *(Assoc. Prof. Exp. Med.);* M. YOUNES *(Assoc. Prof. Med.)*

McIntyre Medical Sciences Building, Room 1023. Telephone 392-4209.

Physiology has its roots in many of the basic sciences including biology, chemistry, mathematics, and physics. As one of the central biomedical sciences, physiology overlaps with other biomedical sciences such as anatomy, biochemistry, pathology and pharmacology, and with psychology and biomedical engineering, and is one of the prime contributors of basic scientific knowledge to the clinical medical sciences.

The Department of Physiology at McGill is engaged in studies ranging from the cell and molecular to the population level in a variety of invertebrates and vertebrates, including man. A wide range of interest and expertise in physiology is represented by the staff of the Department, including cardiovascular, respiratory, renal, exercise, neurophysiology, immunology, biophysics and biomathematics. A number of faculty members in the Department have formal or informal liaisons with basic science (mathematics, physics, electrical engineering, chemistry) and clinical departments (medicine, surgery, pediatrics, neurology, psychiatry, anesthesia), reflecting and reinforcing the close ties which physiology maintains with other disciplines.

Graduates at the B.Sc. level have found rewarding career opportunities in secondary school science teaching, government service, and laboratory

technical assistance, e.g. in pharmaceutical houses, hospitals, and institutions of higher learning. Further, physiology is an excellent background for medicine or dentistry or for other post-graduate work, e.g. in physiology, experimental medicine, pharmacology and physiological psychology.

The programs offered in physiology differ in their orientation but they all contain a common, in depth, core of material covering cardiovascular, respiratory, renal, neurophysiology and immunology. The specified U1 courses are identical for all programs except the Joint Major and Joint Honours Program in Immunology and thus afford the student maximal flexibility before deciding on a particular program to follow in U2 and U3. Consult the Departmental secretary in Room 1137 for an advisor.

FACULTY PROGRAM

For details see Faculty Programs, page 162.

MAJOR PROGRAM

MAJOR IN PHYSIOLOGY AND PHYSICS (71 credits).

U1: 26 credits: Physiology 552-211D*; Mathematics 189-222A,B -223A, -315A,B; Physics 198-232A,B, -233A, -235B.

U2: 26 credits: Physiology 552-311D; Mathematics 189-319B; Physics 198-328A,B or -339B, -231A, -413A; and 2 of Mathematics 189-317A; Physics 198-334B, -341B.

U3: 22 credits: Physiology 552-457A and 458B; Physics 198-346D, 6 credits in Physiology and 6 Credits in Physics to be selected in consultation with Physiology and Physics.

*The corequisite course Biology 177-201D is waived for this program only.

HONOURS PROGRAMS IN PHYSIOLOGY

Admission and Continuation:

All admissions to Honours programs will be in U2, and a student must have a U1 GPA of 3.1, with no less than 70% in Physiology 211D. Admission to U3 requires a U2 CGPA of 3.2 with no less than 70 in required U2 Physiology courses. Decisions on borderline cases for admission to U3 will be heavily influenced by student standing in required U2 Physiology courses.

The Department reserves the right to restrict the number of entering students in the Honours programs. Students who do not maintain Honours standing may transfer their registration to the Faculty Program in Physiology.

Application for admission to Honours must be made before September 1st, 1976. All candidates will be interviewed for admission during the period 1-10 September. Consult the Department for specific times.

Graduation: To graduate from an Honours Physiology Program the student will have a CGPA of 3.2 with a mark no less than 70% in all required Physiology courses

Honours Programs In Physiology (73-74 Credits).

U1: 29 credits: Biology 177-201D; Chemistry 180-204A,B -212A,B, -214B, -222A,B; Mathematics 189-231A,B; Physiology 552-211D.

U2: 24-25 credits: Biochemistry 507-302D; Biology 177-301B*, -309A; Physiology 552-311D.

Neurophysiology option (in addition to the above): Anatomy 504-321A; Physiology 552-351B.

Physiology option (as with Neurophysiology option):** Anatomy 504-261A, -312B.

U3 20-21 credits: Neurophysiology option: Biochemistry 507-455B or -456B; Mathematics 189-323A; Physiology 552-453A, -455D.

Physiology option: Physiology 552-459D, Experimental Medicine 516-512A and 12 credits in upper level Physiology courses.

*Section 2B followed by section 1A and 1B

** Students in the Physiology option may replace the sequence 189-231A,B and 177-309A with 189-222A,B and 189-315A,B.

INTERDEPARTMENTAL HONOURS IN IMMUNOLOGY.

The Departments of Biochemistry, Microbiology and Immunology, and Physiology are offering an interdepartmental Honours program in Immunology. Physiology students interested in the program should contact Dr. W.S. Lapp.

Details of this program may be found on page 172 of the Announcement.

COURSE DESCRIPTIONS

552-201A PHYSIOLOGY OF MAN: ORGAN AND TISSUE PHYSIOLOGY. (3 credits; 2 hours lecture with a conference and/or demonstration, and/or laboratory on alternate weeks; Prerequisites: Collegial courses in Biology or Anatomy, and in Chemistry and Physics; with Organic Chemistry (212 or equivalent) as a pre-or co-requisite). Physiology of blood and body fluids, nerve and muscle, heart and vessels, lungs and gas transport, and kidney. (For students in the School of Physical and Occupational Therapy, the School of Nursing, the Faculty of Education, and other students with permission of the department.)
Professor MacIntosh and Staff

552-202B PHYSIOLOGY OF MAN: METABOLIC AND REGULATORY PHYSIOLOGY. (3 credits; 2 hours lectures, with a conference and/or demonstration and/or laboratory on alternate weeks; Pre-

requisites: Collegial courses in Biology or Anatomy, Chemistry and Physics, with Organic Chemistry (212 or equivalent) as a pre-or co-requisite). Physiology of digestion, organic metabolism and energy balance, endocrine control systems, reproduction, central nervous system and special senses. (For students in the School of Physical and Occupational Therapy, the School of Nursing, the Faculty of Education, and other students with permission of the department.)
Professor MacIntosh and Staff

Physiology 201A AND 202B are companion courses and it is recommended that they be taken in that sequence, but they may be taken in separate years or in the reverse sequence.

552-211D MAMMALIAN PHYSIOLOGY WITH EMPHASIS ON THE PHYSIOLOGY OF MAN. (6 credits; First term, 3 hours lectures; Second term, 2 hours lectures; with 3 hours laboratory every second week in both terms; Prerequisites: As for Physiology 201A and 202B; Biology 201D if not already taken must be taken concurrently). For students in the Faculty of Science, and for other students with permission of the Department.
Professor Weldon and Staff

552-311D INTERMEDIATE PHYSIOLOGY. (6 credits; 3 hours of lectures, alternating with 2 hours of lectures and 3 hours laboratory, per week; Prerequisites: Physiology 211D, permission of the instructor). The Physiology of : 1) the Nervous System, 2) the Immune System, 3) the Respiratory System, 4) the Cardiovascular System, and 5) the Renal System. Restricted enrolment.
Professor Miserocchi and Staff

552-312D SELECTED TOPICS IN INTERMEDIATE PHYSIOLOGY. (3 credits, with timetable to include one half the hours of Physiology 311D; Prerequisites: Physiology 211D, permission of the instructor). Any combination of three of the topics listed in 311D except the Nervous System; or a combination of the Nervous System and one other topic. Restricted enrolment.
Professor Miserocchi and Staff

552-313D SELECTED TOPICS IN INTERMEDIATE PHYSIOLOGY. (3 credits, with timetable to include one half of Physiology 311D; Prerequisites: Physiology 312D, permission of the instructor). The remainder of the topics in Physiology 311D not previously taken in Physiology 312D. Restricted enrolment.
Professor Miserocchi and Staff

552-351B EXPERIMENTAL NEUROPHYSIOLOGY. (3 credits; 2 hours lecture, 3 hours laboratory or demonstration; Prerequisites: Physiology 211D, Anatomy 421A and concurrent enrolment in 311D or 312D. This course is primarily for Physiology Honours students, but is open to a limited number of others). The course is aimed at providing the student with an understanding of modern experimental techniques in neurophysiology.
Staff

552-411A MOLECULAR PHYSIOLOGY. (3 credits; modular instruction, seminars and projects; Prerequisites: Physiology 211D, 311D (or concurrently): Chemistry 222, 204, 214; Biochemistry 451B recommended.) Principles of molecular interactions in and at membranes and cells, including a discussion of experimental techniques; and their application to structure-function relationships in cell adhesion, blood clotting and thrombosis, immunophysiology and other selected areas. Restricted enrolment.
Professor Frojmovic

552-453A ADVANCED NEUROPHYSIOLOGY. (6 credits; 2 hours lecture and 6 hours laboratory weekly; Prerequisite: Physiology 351B. Enrolment restricted to Physiology Honours students (Neuro Option)). A systematic coverage of peripheral synaptic mechanisms. The Laboratory will consist of a quantitative investigation of neuromuscular transmission in amphibia and peripheral reflexes in Aplysia using intracellular electrical recording techniques.
Professor Lukowiak

552-454A NEUROSCIENCE RESEARCH SEMINAR (3 credits; 2 hours seminar; Prerequisite: Permission of the Department). Selected topics on the mechanisms of synaptic transmission. The first term only of 455D. Students will be required to give a verbal presentation and to write an essay on a topic covered in the seminars.
Professor Krnjevic

552-455D NEUROSCIENCE RESEARCH SEMINAR. (6 credits; 2 hours seminar; Prerequisite: Permission of the Department). Selected topics in the neurosciences will be covered with the participation of staff, invited speakers, and students. The first term will concentrate on mechanisms of synaptic transmission, and the second term on motor and sensory mechanisms in the central nervous system. Students will be required to give a verbal presentation and to write an essay each term on one of the topics covered in that term.
Professors Krnjevic and Mandl

552-456B NEUROSCIENCE RESEARCH SEMINAR (3 credits; 2 hours seminar; Prerequisite: Permission of the Department). Selected topics on motor and sensory mechanisms in the central nervous system. The second term only of 455D. Students will be required to give a verbal presentation and to write an essay on a topic covered in the Seminars.
Professor Mandl

552-457A EXPERIMENTAL PHYSIOLOGY. (3 credits). Individual project work under Faculty supervision. This course is primarily for U3 students in the Honours Physiology Programs.
Prof. Wechsler, Staff & Grad. Students

552-458B EXPERIMENTAL PHYSIOLOGY. (3 credits). Individual project work under Faculty supervision. This course is primarily for U3 students in the Honours Physiology Programs.
Professor Wechsler and Staff

552-459D PHYSIOLOGY SEMINAR. (6 credits; 2 hours seminar; Prerequisite: Permission of the Department). Selected topics in mammalian physiology will be covered with the participation of staff, invited speakers, and students. Students will be required to write one essay per term on topics covered in that term. The course is open to Physiology Honours students and to other selected students.
Professor Milic-Emili

552-461D EXPERIMENTAL PHYSIOLOGY. (6 credits). Individual project work under Faculty supervision. This course is primarily for U3 students in the Honours Physiology Programs.
Professor Wechsler, Staff & Grad. Students

552-502A EXERCISE PHYSIOLOGY. Offered in conjunction with Faculty of Education. (3 credits; Prerequisite: Physiology 311D). The course deals with questions related to the behaviour of physiological processes in response to physical effort. In particular it explores such areas as structural basis of muscle contraction, neural control of muscle, mechanics and energetics of muscle contraction, fuel utilization, fatigue, physiological adjustments during exercise and influence of training and heredity.
Professor Klissouras

552-507D ADVANCED APPLIED RESPIRATORY PHYSIOLOGY. Offered in conjunction with the Dept. of Experimental Medicine. (6 credits; Prerequisite: Physiology 311D). Comprehensive coverage of respiratory physiology starting with fundamental principles and proceeding to latest developments in the field. Clinical application of physiological processes and their impairment in disease states are briefly referred to. Some background knowledge of respiratory physiology is advisable.
Professor Engel

552-508A ADVANCED RENAL PHYSIOLOGY. Offered in conjunction with the Dept. of Experimental Medicine. (3 credits; Physiology 311D or the equivalent is a necessary prerequisite). Lectures and discussion groups cover in depth most of the major aspects of kidney physiology such as control of the renal circulation, acidification of the urine and tubular transport of electrolytes and non-electrolytes.
Professors Levy and Seely

552-513D CELLULAR IMMUNOLOGY (6 credits; 3 hours lectures; Prerequisite: Microbiology 428-314B or its equivalent). An advanced course dealing with the functional anatomy, cellular interactions and the regulation of the normal immune response. Specific immunological problems will be discussed.
Professors Lapp and Gold

552-515A PHYSIOLOGY OF BLOOD I. Offered in conjunction with the Dept. of Experimental Medicine. (HEMOSTASIS AND RBC DESTRUCTION). (3 credits; Prerequisite: Physiology 311D). A course providing in depth information in some of the most important areas of hemostasis, thrombosis, blood coagulation, immuno-haematology and erythrocyte destruction.
Professor Cooper

552-516B PHYSIOLOGY OF BLOOD II. (OXYGEN TRANSPORT AND NUTRITIONAL ANEMIA). Offered in Conjunction with the Dept. of Experimental Medicine. (3 credits; Prerequisite: Physiology 311D). In depth study of metabolism of iron, vitamin B12 and folate, cell maturation, oxygen transport and control of erythropoiesis.
Professor Cooper

552-517B PHYSIOLOGICAL SUPPORT SYSTEMS. (3 credits; Prerequisite: Permission of instructor). Physiological, bioengineering, chemical, and clinical basis of physiological support systems including basic principles, compartmental and membrane transport, rheology, fluid dynamics, blood-surface interaction, enzyme engineering, and biomaterials. Examples include artificial kidneys, liver support systems, oxygenators cardiac support systems, articifial cells, and vascular substitutes.
Professor Chang

PSYCHOLOGY (204)

Professors — D. BINDRA *(Chairman);* M.C. CORBALLIS; D.G. DOEHRING; VIRGINIA DOUGLAS; G.A. FERGUSON; D.O. HEBB; W.E. LAMBERT; J. MACNAMARA; R.B. MALMO; R. MELZACK; BRENDA MILNER; P.M. MILNER; E.G. POSER; M.S. RABINOVITCH; MURIEL STERN
Associate Professors — A. BREGMAN; D. DONDERI; R. KANUNGO; A.A.J. MARLEY; R.O. PIHL; J.O. RAMSAY; T.R. SHULTZ; D.M. TAYLOR; G.R. TUCKER; N. WHITE; BLOSSOM WIGDOR; S. YULIS
Assistant Professors — FRANCES ABOUD; I. BINIK; SUSAN CAMPBELL; K. CLARK; M.S. CUMMINS; J. MACDOUGALL; C.L. OLSON; W.E. PIPER; J. WRIGHT; A. ZOLOVICK
Lecturer — A. ROSNER
Sessional Lecturer — ERIKA GUTBRODT
Clinical Consultants — S. BENAROYA; N. GREENBERG; P. GREGOIRE; R. KACHANOFF; G. NEMETH; A. SCHWARTZMAN; A. SURKIS

Stewart Biology Building, Room W/1,
Telephone: 392-4708

Psychology is the scientific study of man's mind and behaviour. It is both a social and biological science. As a social science, psychology studies man in his interactions with other members of his own species. As a biological science, it regards man as the product of evolution and so studies him in biological perperspective, comparing and

contrasting his behaviour with that of other species.

The data of psychology are collected within the psychological laboratory by the use of experimental methods in the study of behaviour, and outside the laboratory by systematic observation of the behaviour of man and lower animals. The combination of experimentation and observation results in a knowledge of man's behaviour as he perceives his world, learns, directs his behaviour towards certain goals, and reacts to stress, frustration, and other men. Experimenatation, laboratory techniques, observational procedures, measurement, and statistical methods are important tools of the psychologist in the study of behaviour.

Psychology has many interdisciplinary aspects. The study of many psychological problems involves knowledge drawn from other disciplines such as biology, physiology, linguistics, sociology, philosophy, and mathematics. For this reason a student with varied interests can frequently find a place for these interests in psychology.

Psychology is a young science so that explanations of the processes underlying observed phenomena are often theoretical and speculative. The major objectives of psychological study are to reduce the discrepancy between theory and fact and to provide better answers about why man thinks and behaves as he does.

Although a number of undergraduate courses in psychology have applied implications, applied training is in no way the purpose of the undergraduate curriculum. The purpose of that curriculum is to introduce the student to an understanding of the basic core of psychological knowledge, theory, and method, regardless of questions of practical application.

The B.A. or B.Sc. with a Major or Honours degree in psychology is not a professional qualification. It does not qualify the individual to carry on professional work in psychology. In the Province of Quebec the minimum requirement for membership in the Corporation of Psychologists of the Province of Quebec, the professional association governing the work of psychologists in the Province, is an M.A. or M.Sc. degree, or other equivalent degree. Undergraduate courses in psychology may prove of considerable value to students planning careers in professional fields other than psychology, such as medicine, education, social work, communication disorders, or business and industry.

Students who are interested in psychology as a career must pursue graduate studies. Persons who hold graduate degrees in psychology, usually the Ph.D., may find employment in universities, research institutes, hospitals, community agencies, government departments, large corporations, or may act as self employed consultants. At the graduate level, psychology has many specialized branches including social psychology, physiological psychology, experimental psychology, clinical psychology, child psychology, industrial psychology, community psychology, educational psychology, and others. Also at McGill at the undergraduate level, as indicated below, a student may pursue an undergraduate Major program in a wide variety of areas of specialization.

Although requirements for admission to graduate studies in psychology vary from one university to another, both the Honours and Major degrees in psychology may qualify the student for admission to many graduate schools, provided, of course, that sufficiently high marks are obtained.

The essential difference between the Honours and the Major program is that higher standards are required of Honours students. Honours students also have an opportunity to work in small groups closely with staff members.

PSYCHOLOGY ORIENTATION

All students entering Psychology undergraduate programs are required to attend an orientation meeting that will be held at 10:00 a.m. on Wednesday, September 1 in Room S1/4 of the Stewart Biology Building for Arts students, and at 10:00 a.m. on Thursday, September 2 in Room S1/4 of the Stewart Biology Building for Science students. Before attending the meeting, students must read the Announcement of the Faculties of Arts and of Science and the 1976-77 edition of the Psychology Department Handbook. The latter will be available in the University Bookstore from about the beginning of July. Out-of-town residents may have a copy of the Handbook mailed to them upon written request to the Psychology Department.

The main purpose of the orientation meeting is to instruct students about filling in the Study Plan Forms and to provide further information about Psychology programs. After the meeting, students may meet individually with advisers in order to have their Study Plan Forms approved for registration. In exceptional cases, students who are unable to attent the orientation meeting may consult an adviser earlier. Call Mrs. Robinson at 392-4694 for further information. Students **must** read the Announcement and the Handbook before seeing an adviser.

PROGRAM INFORMATION

The Psychology Department offers 15 different options in its 54 credit programs. Except where otherwise stated, each of these programs may be taken as Major, Honours, or Faculty programs. The differences between these three categories of programs are outlined below. The descriptions of the 6 options available in the B.Sc. program follow. See page for descriptions of the options available only in the B.A. program.

PREREQUISITES

It is expected that most students who major in Psychology will have taken introductory Psychology and Statistics at the collegial level. In the first year all major students must take Psychological Stastics at

the collegial level. In the first year all major students must take Psychological Statistics (204-305A or B). Those students who have not taken a collegial level statistics course must also take Psychology 204-204A or B in addition to the other courses in their program.

A student who has not taken an introductory psychology course at the collegial level may major in psychology by taking Psychology 204-201D in their U1 year and also the courses in Psychological Statistics 204-204A or B and 204-305A or B.

MAJOR PROGRAM

The following options are available in the Major program in Psychology:

1. General Psychology
2. Experimental Psychology
3. Child Psychology
4. Personality and Abnormal Psychology
5. Psychobiology
6. Quantitative Psychology

Call the Chief Adviser, Mr. Arnold Rosner, (392-4694) to be assigned to an adviser. In the first year of any of the above programs all Major students take Psychology 204-305A,B. Detailed descriptions of the programs will be found starting on page 135. Students majoring in psychology must obtain a minimum grade of C in all 54 credits required by their program. A grade lower than C may be made up by taking another equivalent course (if there is one), by successfully repeating the course, or by successfully writing a supplemental examination (if there is one). Students are reminded that at least 54 credits in their program must be in their Faculty.

HONOURS PROGRAM

Honours in Psychology prepares students for graduate study, and so emphasizes practice in the research techniques which are used in graduate school and professionally later on. Honours students take Psychology 204-380D in the first year of their program (normally U2) and they take Psychology 204-480D and 204-481D in the second year (normally U3). These courses have limited enrolments, and admission to Honours is selective. There is normally room for 30-35 new Honours students each year. Students with a cumulative grade point average of 2.8 or better, are eligible to apply; however, during the past several years it has been possible to accept very few students with averages below 3.5.

Students are accepted into Honours at the beginning of U2, and the two-year sequence of Honours courses continues through U3.

Applications can be obtained from the general office of the Department of Psychology, Room W8/1, Stewart Building. The applications must be completed and returned to the general office by September 1 of the year for which admission to Honours is sought. Candidates will be advised of the Department's decision by letter shortly after September 1. For information (other than application forms) about the Honours program, phone Professor Virginia Douglas, Honours Committee Chairman, at 392-4689.

FACULTY PROGRAMS

A Faculty Program in Psychology is a sequence of courses which represents a lesser degree of specialization than a Major or an Honours program. A Faculty Program may be made up of any of the Major programs with the substitution of 6 credits from U2 Psychology courses for Psychology 204-211D and 204-305A or B. The joint program in psychology and mathematics is also a Faculty Program. For further details see program information at beginning of the Science section (see page 162).

PROGRAM DESCRIPTIONS

The courses in the programs are ordered sequentially so that it will normally take three years to complete a program. The Major and Faculty Programs all include 18 credits in each of U1, U2, and U3. Students may, with the consent of their Academic Adviser, substitute up to 6 credits in a program. Any further changes must be approved by the Associate Dean of the Faculty.

When selecting optional program courses from other departments, it is the student's responsibility to see that she or he has taken the appropriate prerequisites and/or obtained permission of the department where necessary.

None of the B.A. or B.Sc. programs provides professional training. They are all intended to give the student a general academic background in the interest area indicated by their titles. Those who are interested in practising psychology professionally must obtain graduate degrees at least at the Master's level, and should preferably continue on to the Ph.D. The Honours programs are most specifically designed to train students who intend to go to graduate school. However, it is important to remember that admission to graduate studies is highly competitive, and that no degree guarantees entry to advanced study. Students with a Major in psychology may also, if they have chosen their courses appropriately and obtained high enough standing, be admitted to graduate studies, although they may sometimes be required to complete a qualifying year. Students in Faculty Programs who decide to go into graduate study in psychology will most probably have to complete a qualifying year first. Further information about advanced study in Psychology may be obtained from the American Psychological Association's Handbook on the topic. It is usually on sale in the University Bookstore.

GRADUATE STUDY

The adviser to Major students will, whenever possible, assist students in planning their courses to coincide with their professional aims. Most graduate schools require not only a record of high achievement, but also adequate performance on some

entrance examinations such as the Graduate Record Examination and the Miller Analogies Tests, as well as letters of recommendation.

FACULTY PROGRAMS

For details, see Faculty Programs, page 162.

MAJOR PROGRAMS

GENERAL PSYCHOLOGY OPTION

This program is intended to give maximum flexibility to students in choosing their own courses. In this 54 credit program at least 36 and as many as 54 credits must be in psychology courses. The program must include Psychology 204-305A,B and 9 credits in 400 level psychology courses. If fewer than 54 credits in psychology are taken, then the difference between that number and 54 must be made up by selecting courses in other departments from the following list (the list may not be up to date in September 1976; the relevant department should be consulted before choosing). Students in the Faculty of Science who select arts courses from this list must have a total of at least 54 credits in science courses among the 90 credits for the B.Sc. degree. Students are expected to have whatever prerequisites are described in the Announcement.

Anatomy 504-321A; Anthropology 141-202B, -203A, -206A, -228A, -303B, -305B, -312A, -316A, -321B, -428B, -437B, -440A; Biochemistry 507-455B; Biology 177-201D, -205D, -277A,B, -303A, -305A, -325A, -326B, -351B, -352A, -370B, -372B, -385B, -386A, -391A, -392B, -394B, -471B, -488A, -493B; Computer Science 308-220A,B; Geography 183-214A, -215B, -217B, -300B; Linguistics 104-200A,B/104-201A,B, -230A, -241B, -321B; Mathematics 189-217A, -218B, -223A, -224A, -314A,B, -317A, -318A, -323A,B, -324B, -327B, -328B, -417A, -423A, -424B, -447B; Philosophy 107-210A, -211B, -313D, -321A, -322B, -510D; Physiology 552-211D; Sociology 166-210A or-212A, -222A, -223B, -225B, -225B, -227A, -247B, -303A, -309A, -417B.

EXPERIMENTAL PSYCHOLOGY OPTION

U1 Courses: Psychology 204-211D, 305A,B; plus 12 credits selected from 200 and 300 level courses for which you have the prerequisites.

U2 Courses: At least 9 credits from: Psychology 204-300A, 301B, 302A, 303B, 308D; plus enough credits from the following list to make up 18: Psychology 204-311A, 309B, 310D, 340A, 335A, 336B, 341B, 342A.

U3 Courses: Psychology 204-400B, 403A; plus 12 credits selected from: Psychology 204-401D, 416A, 417B, 404B, 406B, 407A, 423A, 424B, 425A, 430B, 450D.

NOTE: The former cognition and thinking option has been subsumed under the Experimental Psychology Option. Students particularly interested in the broad area of cognitive psychology (human problem solving, intelligent action, language, thinking, etc.) as a background for education, assessment of intelligence mental retardation, and so on, are encouraged to take the following courses: Psychology 301B, 302A, 303B, 311A, 340A, 341B, 401D, 404B, 407A, and 425A. They are also strongly encouraged to take courses in linguistics, philosophy (especially logic), and mathematics (eg: calculus, algebra, mathematical logic, computability and mathematical linguistics.)

CHILD PSYCHOLOGY OPTION

Students are encouraged to choose their electives from outside the Psychology Department.

U1 Courses: Psychology 204-211D, 305A,B, 304D; plus 3 credits selected from: Psychology 204-300A, 301B, 302A, 303B, 315B; plus 3 credits, selected from Sociology, Anthropology, Linguistics, and Biology.

U2 Courses: Psychology 204-413D, or 414D; plus 6 credits selected from Psychology 204-300A, 301B, 302A, 303B, 306A, 315B; plus 3 credits selected, from psychology courses; plus 3 credits, selected from Sociology, Anthropology, Linguistics, and Biology.

U3 Courses: Psychology 204-413D, or 414D; plus 6 credits, selected from any 400 level courses in psychology; plus 6 credits, selected from Sociology, Anthropology, and Biology.

PERSONALITY AND ABNORMAL PSYCHOLOGY OPTION

U1 Courses: Psychology 204-305A,B; plus 15 credits to be selected from: Psychology 204-201D, 211D and courses selected from such departments as Biology, Sociology, Anthropology and Philosophy.

U2 Courses: Psychology 204-337A, 338B plus 12 credits selected from: Psychology 204-300A, 301B, 302A, 303B, 304D, 308D, 309B, 310A, 311A, 313A, 332A, 404B; and/or selected subjects from such departments as Biology, Physiology, Sociology and Philosophy.

U3 Courses: 18 credits from Psychology 204-310D, 400B, 402D, 403A, 406A, 418B, 419B, 428B, 430B, 457B, 405D, 408A, 412A, 433B, 451D, 458B, 434B, 491D.

PSYCHOBIOLOGY OPTION

U1 Courses: Psychology 204-305A, B plus 15 credits selected from: Psychology 204-201D*, 211D, 300A, 301B; Biology 177-205D; Physiology 552-211D. *Must be taken by students who have not taken two terms of introductory psychology at the CEGEP level or its equivalent. May not be taken by students who have met this requirement.

U2 Courses: Psychology 204-308D plus at least 9 credits selected from: (6 psychology credits from U1 list may be substituted) Psychology 204-302A, 303B, 306A, 311A, 337A, 342D; plus at least 6 credits selected from: Biology 177-201D, 305A, 318B, 386A, 389B, 391A, 392B; Anatomy 504-321A; Computer Science 308-220A,B.

U3 Courses: At least 6 credits selected from: Psychology 204-422A, 423A, 424B; plus 12 credits selected from: (6 credits from the U2 list may be substituted) Psychology 204-404B, 407A, 430B; Biology 177-488A, 493B; Pharmacology 549-461D.

QUANTITATIVE PSYCHOLOGY OPTION

U1 Courses: Mathematics 189-222A,B; Computing Science 308-200A,B, or 220A,B; plus 6 credits to be selected from Psychology 204-210D, 302A, 303B.

U2 Courses: Mathematics 189-323A, 324B; plus 3 credits selected from Mathematics 189-314A,B, 317A, 318A, 327B, 328B; plus 9 credits selected from Psychology courses (other than 204-204A,B; 305A,B), which must include Psychology 204-302A, 303B if not taken in U1.

U3 Courses: Psychology 204-335A, 336B; Mathematics 189-423A, 424B, 417A, 447B; plus 6 credits selected from psychology courses other than Psychology 204-204A,B, 305A,B.

COURSE DESCRIPTIONS

NOTE: Prerequisites: A basic two-semester introductory course in psychology is a prerequisite for all psychology courses with the following exceptions: 204-201D, 204A,B, 203A, 206B, 305A,B. All 200 and 300 courses are open to students other than Major and Honours students in psychology provided the prerequisites are met and unless otherwise specified. Due to sabbatic leaves and other considerations some courses may not be given in a particular year.

For more detailed information about courses in psychology see *Handbook of Courses and Programs in Psychology* which is on sale at the Bookstore.

NOTE: A course is restricted to Honours students when the fifth character of the six digit course number is 7 or higher.

204-201D BASIC ISSUES IN PSYCHOLOGY. (6 credits; 2 lectures, 1 conference.) This course deals with the social and biological basis of motivation, emotion, perception, learning, and thinking, with special emphasis on the nature of man and his relation to society.
NOTE: This course is required of all students majoring in psychology who have not had an introductory psychology course, and is also required for particular Major programs in psychology, at the discretion of their advisers. (This course is not open to students who have taken 204-200D).
Professor Melzack

204-203A EMOTION. (3 credits; 2 lectures, 1 conference). A review of the available knowledge bearing on the explanation of the behaviour and experience that characterize emotional states, such as anger, elation, anxiety and depression. Implications of current psycho-physiological research on emotion for the problems of health, the arts, and social life will be explored.
NOTE: This course has no prerequisites; it is designed for students in areas other than psychology. Students in psychology Honours and Major programs may take this course as an elective but may not use credit in this course towards meeting requirements of prescribed programs.
Professor Cummins

204-204A,B INTRODUCTION TO PSYCHOLOGICAL STATISTICS. (3 credits; 2 lectures, 1 conference. Required of all Majors in Psychology and students intending to enter Honours in Psychology). The statistical analysis of psychological data; frequency distributions; graphic representation; measures of central tendency and variability; elementary sampling theory and tests of significance. *Text:* Ferguson: *Statistical Analysis in Psychology and Education,* 4th ed.
NOTE: This course is a prerequisite for Psychology 204-305A,B, 307D, 406B, 453D.
NOTE: Students who have taken certain equivalent courses elsewhere in the university may not take this course. A list of these equivalent courses is available in the Department Handbook.
Professor Ferguson

204-206B COMPUTER AND MAN. (3 credits, 2 lectures, 1 conference). This course considers the basic structures of computers, computer-based psychological theories, the problem of artificial intelligence and the impact of computers on man's concept of himself.
NOTE: This course has no prerequisites; it is designed for students in areas other than psychology. Students in psychology Honours and Major programs may take this course as an elective but may not use credit in this course towards meeting requirements of prescribed programs.
Professor Bregman

204-211D LABORATORY METHODS IN PSYCHOLOGY. (3 credits; 1 lecture, 1 conference plus independent laboratory work. This course is recommended for students planning a career in psychology). Training in laboratory methods is given by requiring students to prepare and present demonstrations of psychological experiments. *Text:* Johnson & Solso: *An Introduction to Experimental Design in Psychology: A Case Approach,* 1971.
Professor Donderi

204-214D INTRODUCTION TO HUMAN COMMUNICATION DISORDERS. (6 credits; 2 lectures, 1 conference). *Not given in 1976-77.* An introductory survey of speech and language pathology, audiology, and aural rehabilitation, including diagnostic and rehabilitation procedures, theoretical bases,

and current research findings. *Text:* Davis & Silverman: *Hearing and Deafness,* 3rd ed.
Professor

204-300A MOTIVATION I. (3 credits; 2 lectures, 1 conference). Motivation is considered in terms of the internal and external factors which act to direct behaviour. Basic principles of motivation are developed, based on the behaviour of both animals and humans. Emphasis is on the evolutionary development of behaviour, and therefore the material considered is mainly from animals. *Texts:* Cofer: *Motivation and Emotion:* Bindra and Stewart: (Eds.) *Motivation.*
NOTE: This course is prerequisite for Psychology 204-309B.
Professor White

204-301B LEARNING. (3 credits; 2 lectures, 1 conference). A survey of contemporary approaches to research on learning. Topics will include historical background, theories of learning, biological limits, and the application of learning paradigms to practical problems.
Professor

204-302A PERCEPTION I. (3 credits; 2 lectures, 1 conference). An introduction to the basic phenomena and problems of perception and sensory psychology. Specific topics include: an introduction to psychophysics; the coding of perceptual attributes such as colour, depth, motion, loudness and pitch; the nature of perceptual constancies, illusions and aftereffects; the role of set and other cognitive influences on perception.
Professor Donderi

204-303B THINKING. (3 credits; 2 lectures, 1 conference). An introduction to the study of higher mental processes. Topics such as: development of thought and language, problem solving, concept formation, imagery, artificial intelligence.
Professor Marley

204-304D CHILD PSYCHOLOGY. (6 credits; 2 lectures, 1 conference). A study of current theory and knowledge about psychological processes in children, with particular attention to the development of intelligence, language and social behaviour.
NOTE: This course is a prerequisite for 204-410D and 412A.
Professor Rabinovitch

204-305A,B PSYCHOLOGICAL STATISTICS. (3 credits; 3 lectures; Prerequisite: Psychology 204-204A or B or equivalent). An introduction to the design and analysis of experiments, including analysis of variance, trend analysis, nonparametric statistics, and multiple regression. *Text:* Ferguson: *Statistical Analysis in Psychology and Education, 4th* ed.
NOTE: Required of all students who propose to enter an Honours or Majors program in psychology. Students who have taken certain equivalent courses elsewhere in the university may not take this course. A list of these equivalent courses is available in the Department Handbook.
Professor Olson

204-306A. COMPARATIVE PSYCHOLOGY. (3 credits; 2 lectures, 1 conference The course is open to U1 students with the permission of the instructor. An introductory biology course is recommended). This course is basically about animals, the way they behave, the mechanisms underlying their behaviour, and some possible connections between the behaviour of animals and the behaviour of humans. Particular emphasis will be placed upon primate (nonhuman and human) behaviour from an ethological viewpoint.
Professor Cummins

204-308D PHYSIOLOGICAL PSYCHOLOGY. (6 credits; 2 lectures, 1 conference). The neural basis of motor and sensory functions, motivation, attention, and learning. *Text:* Milner: *Physiological Psychology.*
Professor Milner

204-309B MOTIVATION II. (3 credits; 2 lectures, 1 conference; Prerequisite: Psychology 204-300A). *Not given in 1976-77.* The development of motivation in individual organisms is studied, with emphasis on the relationship between emotional and motivated behaviour. Human data are considered, including material from the personality theory and abnormal behaviour literature. Reading consists of assignments made during the course.
Professor White

204-310A HUMAN INTELLIGENCE. (3 credits; 2 lectures, 1 conference; Prerequisite: Psychology 204-204A,B or any equivalent course). An introduction to the measurement, structure, development, theory and brain correlates of human intelligence; the role of environment and heredity in its formation; social, cultural, sex, and race differences, will be explored.
Professor Ferguson.

204-311A HUMAN BEHAVIOUR AND THE BRAIN. (3 credits; 2 lectures, 1 conference). The course primarily concerns the behavioural effects of abnormalities of the nervous system. The effects of various types of brain lesions on perception, cognition, language, learning, and emotion are described. For the most part, studies involving human patients will be considered, but experiments involving brain lesions in monkeys and other primates will also be introduced.
Professor Kolb

204-313A. PSYCHOLOGY OF ADOLESCENTS. (3 credits; 2 lectures, 1 conference. Prerequisite: Psychology 204-304D or permission of instructor). This course will examine topics of research on adolescents with the goal of familiarizing students with the adolescent's cognitive and moral development,

search for identity, family relationships and development of independence, sexual attitudes and behaviour, peer influences, education, socialization, and deviations including drug use, alienation and delinquency. This course is not open to students who have taken 204-415A or 204-415D.
Professor Clark

204-321A INTRODUCTORY ENDOCRINOLOGY. (3 credits; 3 lectures. Prerequisites: Chemistry 180-212A,B or equivalent, Biology 177-201D and permission of instructor.) An introductory course emphasizing the general principles of endocrine physiology. Topics include evolution of the endocrine reflex, anatomy of the endocrine glands, physiology of endocrine secretions, pituitary-target gland interrelationships, regulation of endocrine secretions, biosynthesis and metabolism of hormones, reproductive physiology, clinical pathologies of the endocrine glands and physiology of invertebrate hormones.
Professor Zolovick

204-330A INTRODUCTION TO SOCIAL PSYCHOLOGY. (3 credits; 2 lectures, 1 conference). Introduction to basic concepts and theories in the area of social cognition, attitudes, and interpersonal processes.
NOTE: This course is prerequisite for 204-331B.
Professor Taylor

204-331B SELECTED TOPICS IN SOCIAL PSYCHOLOGY. (3 credits; Prerequisite: Psychology 204-330A. No lectures will be given). An intensive study of selected research areas in social psychology. Topics will be selected each year that reflect the interests of the instructor and students. The course will emphasize independent study and student-led seminars in which students present and discuss papers which they have prepared.
Professor Taylor

204-332A INTRODUCTION TO PERSONALITY. (3 credits; 2 lectures, 1 conference). A broad survey of theories of personality. The student is introduced to most of the major theoretical positions.
NOTE: This course is prerequisite for Psychology 204-433B.
Professor Aboud

204-335A FORMAL MODELS OF PSYCHOLOGICAL PROCESSES. (3 credits; 2 lectures, 1 conference; Prerequisite: An elementary understanding of computer science, probability theory, and finite mathematics, e.g. Computer Science 308-200A,B, and Mathematics 189-205A, or permission of instructor). *Not given in 1976-77.* An introduction to formal theories in psychology, and to related experiments. The content of the course will be partially determined by the interests of the class. Topics such as: individual and group decision making, pattern recognition, problem solving, language processing, mathematical learning theory will be discussed.
Professor Marley

204-336B MEASUREMENT OF PSYCHOLOGICAL PROCESSES. (3 credits, 3 lectures. Prerequisites: Psychology 204-204A,B introductory calculus and matrix algebra at the level of, for example; Mathematics 189-223 or -224). The properties of measurements and techniques for the measurement of psychophysical variables such as brightness and loudness and of attitudinal variables such as similarity, preference, and utility. The intent is to provide data analysis tools of immediate value to experimenters and emphasis will be on current problems in experimental psychology.
Professor Ramsay

204-337A INTRODUCTION TO ABNORMAL PSYCHOLOGY. (3 credits; 2 lectures, 1 conference). A survey of the genetic, physiological and environmental origins of intellectual and emotional disorders.
NOTE: This course is prerequisite for 204-338B.
Professor Pihl

204-338B BEHAVIOUR PROBLEMS. (3 credits; Prerequisite: Psychology 204-337A; 2 lectures and 1 conference). An introduction to psychotic behaviour problems, character disorders, experimental methods of pathology and behaviour modification.
NOTE: This course is prerequisite for Psychology 204-491D.
Professor Pihl

204-340A THE PSYCHOLOGY OF LANGUAGE. (3 credits; Prerequisite: An introductory course in Psychology or Linguistics; 2 lectures, 1 conference). The nature of the psychological processes involved in speech and language is considered in relation to maturational and environmental factors. *(Text:* Slobin: *Psycholinguisitcs.*
Professor MacNamara

204-341B SELECTED TOPICS IN PSYCHOLINGUISTICS. (3 credits; 2 lectures, 1 conference). *Not given in 1976-77.* The course will discuss the psychological aspects of bilingualism in individual, school and society.
Professor MacNamara

204-342B HORMONES AND BEHAVIOUR. (3 credits; 2 lectures, 1 conference; Prerequisite: Psychology 204-321A). The role of hormones in organization of CNS function, as effectors of behaviour, in expression of behaviours and in mental illness.
Professor Zolovick

204-380D SEMINAR ON EXPERIMENTAL PROBLEMS. (6 credits; 3 hour seminar. For Honours students only). Honours students present current literature reports in individual program areas, for discussion. Then each student starts an original investigation in collaboration with an individual staff member.
Staff

204-400B CONTEMPORARY PSYCHOLOGICAL THEORY. (3 credits; 2 lectures, 1 conference; Prerequisite: Psychology 204-403A). Recent progress

towards the integration of psychological knowledge into a coherent framework is discussed with reference to theoretical ideas and experimental evidence in the areas of learning,, motiviation, perception, thinking, personality, and mental abnormality
Professor Stern

204-401D COGNITIVE PROCESSES. (6 credits; 2 lectures, 1 conference; Prerequisites: Psychology 204-301B, 302A, 303B, 340A). The study of the acquisition, storage, transformation and use of knowledge. Theories based on associationist, stimulus-response, Gestalt, computer and logical models of thought (e.g. Piaget) are evaluated. Application to processes of concept formation, problem solving, language and memory.
Professor Bregman

204-402D EXPERIMENTAL PSYCHOPATHOLOGY. (6 credits: 3 hour seminar. Prerequisites: Psychology 204-337A, 338B and permission of the instructor). The course is suggested only for those interested in the application of concepts and models from experimental psychology to clinical problems. The focus will be on trying to understand the nature of psychopathology — not on therapy or behaviour change. Course content will vary from year to year yet representative topics might include: animal models of psychopathology, experimental studies of anxiety and psychopathy, genetics and schizophrenia, and epidemiological studies of behaviour disorders.
Professor Binik

204-403A MODERN PSYCHOLOGY IN HISTORICAL PERSPECTIVE. (3 credits; 3 lectures). A survey of the social and ideological influences on psychology from its philosophical beginnings through the period of the schools to its modern situation.
Professor Ramsay

204-404B ATTENTION AND MEMORY. (3 credits; 2 lectures, 1 conference. This course is restricted to U3 students). A critical examination of recent research on how man selects, codes, stores and retrieves information. Phenomena of visual and auditory storage, coding and rehearsal in memory, imagery, the nature of forgetting and mechanisms of retrieval are discussed in relation to information processing models.
Professor Corballis

204-405D AGING. (6 credits; Prerequisite: Psychology 204-304D or permission of instructor; 2 lectures, 1 conference). A review and discussion of the available knowledge on how the process of aging affects the individual's intellectual and personality functioning with attention to the interacting processes. Research as related to intellectual and perceptual changes, memory and adaptive capacity will be assessed and problems related to research in this field considered.
Professor Widgor

204-406B PSYCHOLOGICAL TESTS AND MEASUREMENT. (3 credits; Prerequisite: Psychology 204-204A or B or its equivalent. 2 lectures, 1 conference). *Not given in 1976-77.* An introduction to the theory and practice of psychological and educational measurement. Special attention will be paid to the theoretical problems involved in the use of measurement techniques and statistics in psychology. A wide variety of tests will be discussed in the areas of clinical, social, educational, and personality psychology.
Professor MacNamara

204-407A PERCEPTION II. (3 credits; 2 lectures, 1 conference. Prerequisite: Psychology 204-302A). Advanced topics in perception, including modern approaches to psychophysics; detailed analysis of neurophysiological and psychophysical experiments of the way the nervous system extracts information about shape or form; pattern recognition and the use of computer simulation; and the perception of speech and other complex auditory sequences.
Professor

204-408A PRINCIPLES OF BEHAVIOUR MODIFICATION. (3 credits; Prerequisites: Psychology 204-337A and 204-300A or permission of instructor; 2 lectures, 1 conference). An introduction to theory and research relevant to the modification of human behaviour. Emphasis will be on those studies in which specific behaviour — sub-optimal or maladaptive — is altered in accordance with contemporary principles of learning. Some opportunity for field work may be available. *Text:* Kanfer & Phillips: *Learning Foundations of Behavior Therapy.*
Professor Poser

204-411D ADVANCED SOCIAL PSYCHOLOGY. (6 credits; 3 lectures. 1 conference). A broad coverage of various sources of influence that shape personalities and give structure to human behaviour. The attempts of social philosophers to explain man's social nature are contrasted with contemporary, more experimental approaches, e.g. cognitive, learning-theory, group process, and cultural.
Professor Lambert

204-412A DEVIATIONS IN CHILD DEVELOPMENT. (3 credits; Prerequisite: Psychology 204-304D; 2 lectures, 1 conference). This course will consider deviations in perceptual, cognitive, social and emotional development. Emphasis will be on research and theory which underline the complex interactions among constitutional and environmental factors which lead to such disorders as brain injury, psychosis, mental retardation, learning difficulties and behaviour problems. *Text:* Quay & Werry (Eds.) *Psychopathological Disorders of Childhood, 1972.*
Professor Campbell

204-413D COGNITIVE DEVELOPMENT. (6 credits; 2 lectures, 1 conference. Prerequisite: Psychology 204-304D). Advanced study of cognitive processes and their development in

childhood. The child's developing conception of object, space, time, causality, logic and number. The relation of cognitive development to learning and problem solving, perceptual development, language development, and intelligence testing.
NOTE: This course is not available to students who have taken Psychology 204-410D.
Professor Shultz

204-414D SOCIAL DEVELOPMENT. (6 credits; 2 lectures, 1 conference. Prerequisite: Psychology 204-304D). Advanced study of the development of social behaviour and social cognition in children. Socialization, interpersonal attachment, aggression, moral development, sex-typing, achievement, group processes, and the impact of mass media. The role of processes such as identification, imitation, social reinforcement, role-taking, and causal attribution of social behaviour.
NOTE: This course is not available to students who have taken Psychology 204-410D.
Professor Aboud

204-416A REINFORCEMENT AND BEHAVIOUR I. (3 credits; 1 three-hour meeting plus optional tutorial, Prerequisite: one of the following: 204-301B, 211D, 315A or permission of instructor). A conceptual analysis of reinforcement and contitioning phenomena, with special emphasis on their systematic relation to learning, motivation and emotion. Topics inclde: fundamental units of behaviour, the Law of Effect, classical conditioning, adjunctive behaviour, conditioned emotional states, frustration, experimental anxiety, and incentive theory.
Professor

204-417B REINFORCEMENT AND BEHAVIOUR II. (3 credits; 1 three-hour meeting plus optional tutorial hour. Prerequisite: Psychology 204-416A or permission of instructor). Advanced topics in behaviour theory; autoshaping, avoidance theories, punishment, information and aversiveness, coping behaviour, controllability and predictability, learned helplessness, acquired reinforcement, and observing behaviour.
Professor

204-418B PSYCHOLOGICAL BASES OF SEXUAL BEHAVIOUR. (3 credits; 2 lectures, 1 conference). This course is designed to provide a conceptual framework to be applied to present theories and research on sex. Emphasis is on methodological issues in the study of sexual behaviour, personality and ethological theories of psychosexual development, clinical sexual problems and the social and ethical issues present in this area.
NOTE: This course is restricted to U3 Honours and Major students.
Professor Yulis

204-419B SELECTED TOPICS IN COMMUNITY PSYCHOLOGY. (3 credits; 2 lectures, 1 conference. Prerequisites: Basic two-term course in introductory psychology plus two additional psychology courses). Emphasis of the course will be on the study of social and community interventions by psychologists in an emerging role as systems change-agents. Subject matter will centre on issues in clinical psychology having social and political import.
Professor Clark

204-422B NEUROCHEMICAL BASIS OF BEHAVIOUR. (3 credits; 2 lectures, 1 conference. Prerequisite: Psychology 204-308D). Anatomical, biochemical and physiological aspects of aminergic systems in the CNS and current theories regarding function of these systems in the mediation of behaviour.
Professor Zolovick

204-423A ADVANCED PHYSIOLOGICAL PSYCHOLOGY I. (3 credits; 2 lectures, 1 conference; Prerequisite: Psychology 204-308D or permission of instructor). Topics covered in this course will be centred around the problems of motivation, emotion, and reinforcement, and the role of the limbic system in these functions. Student participation in a seminar format will be encouraged, in an attempt to study these problems in terms of the research and theories which bear on them.
Professor White

204-424B ADVANCED PHYSIOLOGICAL PSYCHOLOGY II. (3 credits; 2 lectures, 1 conference; Prerequisite: Psychology 204-308D or permission of instructor). Several systems will be chosen from the following list for detailed study, as far as possible, by a seminar approach. Motor system, somatosensory system, auditory system, physiological bases of learning. The neural modelling of behavioural processes will be emphasized.
Professor Milner

204-425A LANGUAGE AND THOUGHT. (3 credits; Prerequisite: a course in psycholinguistics or in linguistics or in the philosophy of language; 2 lectures, 1 conference). The meaning of meaning, the psychological nature of linguistic competence, the relations between language and thought, between language and logic, machine translation, the learning of language by infants — these are among the topics which will be discussed in the light of contemporary theory and research in psychology, linguistics and philosophy. The course is for students with a serious interest in language.
Professor MacNamara

204-428B HUMAN COMMUNICATION AND ITS DISORDERS. (3 credits; 3 lectures. Prerequisites: Linguistics 104-200A,B, 201A,B; Psychology 204-304D or 337A). An examination of the acquisition, maturation and functiong of language skills in children and adults. The unique relationships among hearing, speech, and language functions will be explored. The lecture seminar topics will include the analysis of both normal and aberrant communication behaviours.
Professor Mattingly.

204-430B CONSTITUTIONAL FACTORS IN BEHAVIOUR. (3 credits; Seminar). Individual differences in motivational and temperamental characteristics will be examined in relation to constitutional-experimental interactions with special reference to genetic factors, blood-chemistry variables, and environmental influences.
Professor Stern

204-433B SELECTED TOPICS IN PERSONALITY. (3 credits; Prerequisite: Psychology 204-332A; 2 lectures, 1 conference). An intensive study of the behavioural approach to personality. The emphasis is on a functional analysis of personality.
Professor Aboud

204-434B SELECTED TOPICS ON PSYCHOTHERAPY AND BEHAVIOUR THERAPY. (3 credits; 2 lectures, 1 conference; Prerequisite: Psychology 204-337A). This course will briefly evaluate the therapeutic intervention strategies with neurotics. Approaches to individual, marital and group therapy will also be discussed. The difficulties in specifying objectives for intervention, ethical issues, and research on the therapeutic efficacy will be discussed.
Professor Wright

204-450D EXPERIMENTAL PROBLEMS. (6 credits; Prerequisites: Psychology 204-300A, 301B, or 302A and permission of instructor). Practical experience in research methods. The class is divided into sections of 10-12 students which meet for 3 hours each week. Specific procedures may vary among sections, but in addition to class meetings students carry out one or more research projects and write a thesis based on one of them. Primarily for Major and Special students who intend to proceed to graduate studies.
NOTE: Students will be admitted on the basis of a written application on forms available from the Department (Room W8/1). Applications must be submitted by September 1.
Staff

204-451D STUDY OF THE INTELLECTUALLY AND EMOTIONALLY HANDICAPPED: (6 credits; 1 lecture, 1 conference, 4 hours laboratory; Prerequisite: Permission of instructor). The effects of environmental and emotional development will be examined. Students will participate in a service and research project in community programs dealing with children from disadvantaged environments who have educational and emotional handicaps.
Professor Douglas

204-455D RESEARCH METHODS IN PSYCHOLINGUISTICS. (6 credits; 3 hour seminar. Restricted to graduate and final year students in psychology and linguistics). *Not given in 1976-77.* Various research approaches used by psychologists and linguists will be critically evaluated. Each student will select and conduct a major research project which he will discuss with other seminar members during the course of the year. The use of basic, relevant methodological tools will be reviewed and the effects of experimenter expectancy will be discussed.
Professor Tucker

204-457B PSYCHOLOGICAL PROBLEMS OF THE PHYSICALLY HANDICAPPED CHILD. (3 credits; limited to final year psychology students; 3 lectures, 1 conference). This course will be concerned with the psychological development of deaf and physically handicapped children.
Professor MacDougall

204-458B METHODS OF BEHAVIOUR CHANGE. (3 credits; Prerequisites: Psychology 204-408A and permission of instructor; 1 lecture, 2 conferences). Various techniques of behaviour change will be evaluated in the light of their practical efficacy. In the course of supervised field work, in hospitals and schools, students will have an opportunity to apply some of these techniques systematically.
Professor Poser

204-480D CONTEMPORARY PSYCHOLOGICAL THEORY. (6 credits. For Honours students only. 2 lectures, 1 conference). Recent progress towards the integration of psychological knowledge into a coherent framework is discussed with reference to theoretical ideas and experimental evidence in the areas of learning, motivation, perception, thinking, personality, and mental abnormality.
Professor Bindra

204-481D EXPERIMENTAL PROBLEMS. (6 credits; 2 hours plus laboratory; for Honours students only). A seminar on current problem areas. Supervised investigation of a special field.
Staff

204-491D ADVANCED STUDY IN BEHAVIOURAL DISORDERS. (6 credits; Prerequisites: Psychology 204-337A and 338B and permission of instructor; 1-2 hours lecture or tutorial per week plus a field experience requirement). A critical examination of topics in abnormal and clinical psychology. Emphasis will be on analysis of theoretical positions and empirical findings as they relate to both etiology and treatment.
Professor Piper

204-492A/493B. SEMINARS IN SPECIAL TOPICS. (3 credits each). Each seminar under this title is given at the discretion of an individual instructor. A list of all seminars offered in a particular year, together with the description of topics and conditions of admission, will be published annually in the Department's Handbook of Courses and Programs. A student may not register in more than one of these seminars in any year.
Staff

Courses in the Faculty of Management

The Faculty of Management offers the following courses in the Behavioural Sciences: 280-221A, Social Psychology (3 credits); 280-222B, Organizational Behaviour (3 credits); 272-420A, Group Dynamics and Interpersonal Relations (3 credits); 272-421B, Strategies of Management and Organization Development (3 credits); 275-458A, Consumer Behaviour (3 credits); 275-495A, Marketing Research (3 credits).

Where appropriate to a student's program, and with the permission of the program advsier, one or more of these courses may be taken for credit by students enrolled in programs in psychology. Programs in such fields as personnel management, administrative behaviour, and consumer behaviour are also available to students through a cooperative arrangement between the Faculty of Management and the Department of Psychology.

4 ALPHABETICAL LIST OF STAFF

ABOUD, F.E., B.A.(Tor.), M.A., Ph.D.(McG.) **Psychology**

ADAMS, C.J., B.A. (Baylor), Ph.D.. (Chic.) **Religious Studies; Middle East Studies**

ADDISON, J.R., B.Sc., B.Eng., M.Sc., Ph.D. (McG.) **Physics**

ALI KHAN, Z., B.Sc. (Bilar), M.Sc. (Karachi), Ph.D. (Tulane) **Microbiology and Immunology**

AMASUNO, M., Lic. Fil., Dr. Fil. (Salamanca) **Hispanic Studies**

ANANTHANARAYANAN, K., B.A., M.Sc., Ph.D. (Madr.) **Computer Science**

ANDERSON, H.S., A.B., M.Litt., Ph.D. (Pitt.) **English**

ANDERSON, W., B.Eng., Ph.D. (McG.) **Mathematics**

ANGENOT, M., L. Phil. & Lett., Dr. Phil. & Lett. (Brussels) **French Language and Literature**

ARMSTRONG, W.R., M.A. (N.Z.), M.Sc. (Lond.), Ph.D. (Vic., Wellington) **Geography**

ARNOLD, A., D. Lett. (Frib.) **German**

ARONSON, D.R., B.A. (Wesleyan), A.M., Ph.D. (Chic.) **African Studies Program; Anthropology**

ARSENEAU, C., B.A., M.S.W. (Laval), Dip. Adv. Soc.Wk.Pr. (McG.) **Social Work**

ASIMAKOPULOS, A., Ph.D. (Camb.), M.A. (McG.) **Economics**

ATTWOOD, D., A.B. (Calif.), Ph.D. (McG.) **Anthropology**

AUBERT, J.P., L. ès L. (Lausanne) **French Language Centre**

AUCLAIR, A.N., B.Sc. (McG.), Ph.D. (Wis.) **Biology**

AUSTIN, G.L., B.A. (Cantab.), M.A., M.Sc., Ph.D. (Cant.) **Physics**

AUSTIN, P.M., M.A. (Corn.), B.A., Ph.D. (Tor.) **Russian and Slavic Studies**

BAIRSTOW, F., B.Sc. (Wis.) **Economics; Director, Industrial Relations Studies Program**

BARR, M., A.B., Ph.D. (Penn.) **Mathematics**

BATES, D.G., B.A., M.D. (W. Ont.) **History and Philosophy of Science Program (Faculty of Medicine)**

BAUER, L., M.A. (Montr.) **Russian and Slavic Studies**

BAYLEY, C.C., M.A. (Manc.), Ph.D. (Chic.) **History**

BEACH, E.F., B.A. (Qu.), A.M., Ph.D. (Harv.) **Economics**

BEACHY, J., M.A., Ph.D. (Ind.) **Mathematics**

BECKER, A., B.Eng., M.Sc., Ph.D. (McG.) **Geological Sciences**

BELL, R.E., C.C., M.A. (U.B.C.), Ph.D. (McG.), D.Sc. (U.N.B., Laval), LL.D. (Tor.), F.R.S., F.R.S.C. **Principal & Vice-Chancellor; Physics**

BELL, T., B.Sc., M.B.A. (McG.) **Mathematics**

BELLEAU, B., M.Sc. (Montr.), Ph.D. (McG.), F.R.C.S. **Chemistry**

BELLERT, I., M.A., Ph.D., Dr. Hab. (docent) (Warsaw) **English; Linguistics**

BENAROYA, S., Ph.D. (Montr.) **Psychology**

BENNETT, G.C., B.A., B.Sc. (Sir G. Wms.), M.Sc., Ph.D. (McG.) **Anatomy**

BERGERON, J.J.M., B.Sc. (McG.), Ph.D. (Oxon.) **Anatomy**

BERGMANN, R., M.A. (Munich), Ph.D. (Marburg), B.L.S. (McG.) **Art History**

BERNARD, A., B.A., Ph.D. (Montr.), M.A. (McG.) **Centre d'Etudes Canadiennes-Françaises**

BERTOS, R., M.A. (Athens), Ph.D. (Munich) **Art History**

BINDRA, D., B.A. (Punj.), M.A., Ph.D. (Harv.), F.R.C.S. **Chairman, Psychology**

BINIK, I.M., B.A. (N.Y.U.), M.A., Ph.D. (Penn.) **Psychology**

BIRCHER, M., Ph.D. (Zur.) **German**

BIRD, J.B., M.A. (Camb.) **Geography**

BIRKS, R.I., B.A., M.Sc., Ph.D. (McG.) **Physiology**

BIRMINGHAM, M.K., B.A. (Bennington), M.Sc. (McG.) **Biochemistry**

BIRNIE, J., B.A. (Tor.) **Chemistry**

BLACK, J., B.A. (Tor.), M.A. (Camb.) **Political Science**

BLAISE, B., B.A. (Calc.), M.A. (Bda.), M.F.A., Ph.D. (Iowa) **English**

BLANC, M.Z.F., M.D. (Oporto), C.S.P.Q. **Microbiology & Immunology**

BLOSTEIN, R., B.Sc., M.Sc., Ph.D. (McG.) **Biochemistry**

BOLKER, H., B.A., M.A. (Qu.), Ph.D. (Yale) **Chemistry**

BOLL, W.G., B.Sc., Ph.D. (Manc.) **Biology**

BOORMAN, J.A., B.A. (Alta.), M.A., Ph.D. (Col.) **Religious Studies**

BOOTH, W.T., B.A. (McG.) **English**

BOOTHROYD, E.R., B.Sc. (Bishop's), M.Sc., Ph.D. (McG.) **Biology**

BOSS, V., B.A. (Camb.), Ph.D. (Harv.) **History; History and Philosophy of Science Program**

BOUCHARD, D.F., B.A. (New Hampshire), M.A. Ph.D. (N.Y. State) **English**

BOUCHER, J.P., B.A. (Montr.), Dr. 3rd Cy. (Besançon), M.A. (McG.) **French Language & Literature**

BOULLE, P.H., A.B. (Ind.), M.A. (Stan.), Ph.D. (Calif.) **History**

BRACKEN, H.M., B.A. (Trin. Coll. Hartford), M.A. (Johns H.), Ph.D. (Iowa) **Philosophy; Jewish Studies Program**

BRANDHORST, B.P., A.B. (Harv.), Ph.D. (Calif.) **Biology**

BRAUN, P.E., M.Sc. (U.B.C.), Ph.D. (Calif.) **Biochemistry**

BRAWER, J., B.S. (Tufts), Ph.D. (Harv.) **Anatomy**

BRECHER, I., B.A. (McG.), LL.B. (Yale), M.A., Ph.D. (Harv.) **Economics**

BRECHER, M., B.A. (McG.), M.A., Ph.D. (Yale) **Political Science**

BREGMAN, A., M.A. (Tor.), Ph.D. (Yale) **Psychology**

BRISEBOIS, M., B.Sc., M.A. (Montr.) **Social Work**

BRISTOL, M., A.B. (Yale), Ph.D. (Prin.) **English**

BROWN, R., B.Sc. (Man.), Ph.D. (McG.) **Chemistry**

BROWN, W., M.A. (Col.), B.A., Ph.D. (Tor.) **Mathematics**

BRUCE, M., M.A. (Aberd. and Middlebury) **English**

BRUNEAU, T., B.A. (San Jose State), M.A., Ph.D. (Calif.) **Political Science**

BUITENHUIS, P., M.A. (Oxon.), Ph.D. (Yale) **English; North American Studies**

BUNGE, M., M.A., Ph.D. (Penn.) **Mathematics**

BUNGE, M., Ph.D. (LaPlata) **Philosophy; History and Philosophy of Science Program**

BURGESS, J., B.A. (McG.), M.A. (Tor.) **English**

BURRAGE, D.J., B.A., M.A. (Cantab.), M.Sc. (Brun.) **Computer Science**

BUSSEY, A.H., B.Sc., Ph.D. (Brist.) **Biology**

BUTAS, C.A., M.D. (Cluj.) **Microbiology & Immunology**

BUTLER, I.S., B.Sc., Ph.D. (Brist.) **Chemistry**

CAHN, S., B.Sc., M.Sc. (McG.) **Biology**

CAMPBELL, S., B.A., M.Sc. (Appl.), Ph.D. (McG.) **Psychology**

CARROLL, M.P., M.A., Ph.D. (Stan.) **Sociology**

CARROLL, R., B.S. (Mich.), M.A., Ph.D. (Harv.) **Biology**

CARSON, M.A., B.A., Ph.D. (Camb.) **Geography**

CARTWRIGHT, M.T., B.A., Ph.D. (Exe.), D.U. (Aix Marseilles) **French Language & Literature**

COHEN, M., B.A. (Temple), M.Sc. (McG.) **Computer Science**

CAVE, G.C.B., M.A., (U.B.C.), Ph.D. (M.I.T.), F.C.I.C. **Chemistry**

CECIL, C.D., B.A. (Dart.), B. Litt., M.A. (Oxon.) **English**

CHAMPIGNEUL, Y., L.ès L., Dipl. d'Et. Sup. (Toulouse), Agreg. de l'U. (France) **French Language & Literature**

CHAN, E.C.S., M.A. (Texas), Ph.D. (Maryland) **Microbiology & Immunology**

CHAN, T.H., B.Sc. (Tor.), M.A., Ph.D. (Prin.) **Chemistry**

CHANG, J., B.A. (Taiwan), M.A. (Harv.) **East Asian Languages and Literatures**

CHANG, T.M.S., B.Sc., M.D., C.M., Ph.D. (McG.) **Physiology**

CHASE, R., A.B. (Stan.), Ph.D. (M.I.T.) **Biology**

CHAWLA, A.S., B.Sc. (Punjab), Ph.D. (McG.) **Physiology**

CHOKSI, J., B.A., (Camb.), Ph.D. (Manc.) **Mathematics**

CHRISTENSEN, C., B.A. (Howard), M.S.W. (Mich.) **Social Work**

CLARK, K. **Psychology**

CLERMONT, Y., B.Sc., Ph.D. (Montr.), F.R.C.S. **Chairman, Anatomy**

CLOUTIER, E., B.A. (Ott.), M.A. (Montr.), Ph.D. (Roch.) **French Canada Studies Program**

COCHRANE, R.W., B.Sc., M.A., Ph.D. (Tor.) **Physics**

COHEN, M., B.A. (Temple), M.Sc. (McG.) **Computer Science**

COHEN, M.W., B.Sc., Ph.D. (McG.) **Physiology**

COLE, D., M.A. (U.B.C.) **English**

COLLET, G.P., L. ès L., D.Lit. (Geneva) **French Language & Literature**

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COOPER, B.A., B.Sc., M.D., C.M. (McG.), F.R.C.P.(C.)
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COOPER, S., B.A., M.D., C.M. (McG.) **Anatomy**

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COSTLEY, C., M.S., Ph.D. (Ill.) **Mathematics**

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GRAY, D.G., B.Sc. (Queen's Belfast), M.Sc., Ph.D. (Man.)
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GREEN, C., M.A. (Conn.), Ph.D. (Wis.) **Economics**

GREENBERG, A., M.Sc. (McG.) **Computer Science**

GREENBERG, N., Ph.D. (Montr.) **Psychology**

GREGOIRE, P., Ph.D. (Montr.) **Psychology**

GRICE, R.H., M.A. (Camb.) Ph.D. (Ill.)
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GROSSER, A.E., A.B. (Corn.), Ph.D. (Wis.)
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GUPTA, A., M.A. (Pitt.) **Philosophy**

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HAMILTON, R.F., M.A., Ph.D. (Col.) **Sociology**

HAND, R., B.S., M.D. (N.Y.), F.R.C.P.C., F.A.C.P.
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DENTISTRY

1976/77

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Students intending to seek membership in a professional corporation in Quebec are reminded that after July 1, 1976 they will be required to show that they possess a working knowledge of the French language, in conformity with the requirements of the Professional Code (Bill 250) and the Official Language Act (Bill 22).

Faculty of
DENTISTRY

1976-77

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1 HISTORY

1.1 THE UNIVERSITY

The Hon. James McGill, a leading merchant and prominent citizen of Montreal, who died in 1813, bequeathed forty-six acres of land and £10,000 to the already existing 'Royal Institution for the Advancement of Learning' upon condition that the latter erect "upon the said tract or parcel of land, an University or College, for the purpose of education and the advancement of learning in this Province"; and further upon condition that "one of the Colleges to be comprised in the said University shall be named and perpetually be known and distinguished by the appellation of 'McGill College'.

Owing to a lack of funds and persistent opposition the complete University which had been planned by the Royal Institution was not built, but after years of litigation and effort a Royal Charter was granted in 1821 and the University of McGill College was opened in 1829 with what remained of James McGill's legacy as its endowment, and teaching then started in the Faculties of Medicine and Arts. The Medical Faculty grew steadily, and after an amended Charter was secured in 1852 a new era of progress began for the Faculty of Arts with the appointment in 1855 of Sir William Dawson as Principal, a position which he held for thirty-eight years.

Since 1855 the University has grown vigorously, presently comprising twelve Faculties and seven Schools. In 1899 the Royal Victoria College was opened, a gift of Baron Strathcona, to provide separate teaching and residential facilities for women students. Gradually, however, classes for men and women were merged, and now the University is wholly coeducational. In 1907 Macdonald College was established at Ste. Anne de Bellevue, as a residential college for Agriculture, Household Science, and, originally, the School for Teachers, which is now the Faculty of Education and located on the Montreal campus. The University's general development was greatly facilitated by the generosity of Sir William Macdonald, whose gifts to the University include a Physics Building, a Chemistry and Mining Building, and an Engineering Building, in addition to the college named after him.

At present more than nineteen thousand students are taking regular university courses. New buildings have been erected or acquired to provide the undergraduate and research facilities needed by the increased student body, and include residences, gymnasium, swimming pools and winter stadium as well as a University Centre and a concert hall.

1.2 FACULTY OF DENTISTRY

The history of the McGill Faculty of Dentistry dates back to 1903. Its origin, however, goes back to 1892 when the Association of Dental Surgeons of the Province of Quebec founded, in Montreal, a dental school known as the Dental College of the Province of Quebec. Instruction in this College was in both English and French and the College was located on Phillips Square. This College became associated with Bishop's University in Lennoxville, Quebec, four years later as a department in the Faculty of Medicine of that University, but remained situated in Montreal. In this way the clinical training was provided by the College and the academic training by the University. The first D.D.S. degree in the Province of Quebec was granted by Bishop's University.

In 1903 the McGill University Faculty of Medicine minutes read "that this Faculty is in favour of the establishment of a Department of Dental Medicine....." By a later entry we learn that the McGill Dental School was established in June 1904 as a department in the Faculty of Medicine and continued as such until 1920 when it became known as the Faculty of Dentistry.

The Faculty of Dentistry has always been closely associated with the Montreal General Hospital, having its first dental clinic in the old morgue of that Hospital. In 1923 an annex was built onto the old Montreal General Hospital as a temporary dental clinic and there the clinic remained until the new Hospital was built in 1955, and all facilities moved to these quarters, which were subsequently enlarged and modernized in 1972.

Clinical teaching in the Faculty is mainly carried out in the dental clinic at the Montreal General Hospital, complemented by rotations to other teaching hospitals. Pre-clinical teaching laboratories are housed in the Strathcona Anatomy and Dentistry Building, on campus, and some basic science subjects are still taught in conjunction with the Faculty of Medicine.

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LEO YAFFE, M.Sc.(Man.), Ph.D.(McG.), F.C.I.C., F.A.P.S., F.R.S.C. **Vice-Principal (Administration)**

ALLAN C. McCOLL, D.F.C., B.Com.(McG.), C.A. **Vice-Principal (Finance)**

WALTER F. HITSCHFELD, B.A.Sc.(Tor.), Ph.D.(McG.), F.R.Met.S. **Vice-Principal (Research)**

COLIN M. McDOUGALL, D.S.O., B.A.(McG.)
Secretary-General

J. P. SCHULLER, B.A.(Ott.) **Registrar**

Faculty

ERNEST R. AMBROSE, D.D.S.(McG.), F.I.C.D., F.A.C.D. **Dean of the Faculty**

KENNETH C. BENTLEY, D.D.S., M.D., C.M.(McG.), F.I.C.D., F.A.C.D. **Dental Surgeon-in-Chief, Montreal General Hospital**

WILLIAM D. SANDERS, B.Sc.(Sir G. Wms.), D.D.S.(McG.) **Assistant Dean (Undergraduate)**

GERARD H.G. WEINLANDER, DKFM(Vienna), D.D.S.(McG.), F.I.C.D.
Co-ordinator, Teaching Clinics

KATHLEEN W. OLIVER, B.A.(McG.)
Administrative Assistant

Emeritus Professor

WILFRED J. JOHNSTON, C.M., D.D.S.,(McG.), F.I.C.D., F.A.C.D., F.R.C.D. (C).

3 GENERAL INFORMATION

3.1 REQUIREMENTS FOR ENTRANCE

The minimum requirement for admission to the study of dentistry is the satisfactory completion of EITHER a collegiate program in the Province of Quebec OR two full years in a four-year program leading to the B.A. or B.Sc. degree (or the equivalent thereof). Admission is selective, and students are reminded that fulfilment of the minimum requirements by no means guarantees acceptance. At the present time, due to the number of competitive applicants, students are usually accepted at the U2 academic level or higher.

All applicants must have included one full year course in each of the following subjects in their pre-dental program:

Mathematics
Physics, with laboratory
Inorganic or General Chemistry, with laboratory
Organic Chemistry, with laboratory
General Biology or Zoology, with laboratory
(half year of Botany and half year of Zoology will be accepted, but not one year of Botany alone)

It is recommended that a course in Mammalian Physiology be completed by all applicants prior to admission to the Faculty.

All applicants who intend to practise in the Province of Quebec *must* have a working knowledge of the French language and are urged to acquire this prior to admission.

Other applicants are also encouraged to acquire this level of comprehension in the French language.

Application for admission to the Faculty of Dentistry must be made upon the University and Faculty forms which may be obtained from the Secretary of the Faculty. As the number of students in each class is limited, application should be made early and in any case not later than the *first of March.* Each application must be accompanied by a *non-returnable fee of $15.00* in the form of a cheque or money order payable to McGill University. Students registered at McGill are exempt from this fee.

Canadian applicants are requested to undertake the Canadian Dental Association Aptitude Test and have the results sent to the Faculty. Detailed information may be obtained from the Administrator, Dental Aptitude Test Program, The Canadian Dental Association, 234 St. George Street, Toronto, Ontario M5R 2P2.

Candidates applying from the United States should take the American Dental Association Aptitude Test and have the results sent to the Faculty of Dentistry.

A reservation fee of $50.00 is payable by the applicant within ten days of the receipt of notice that the student has been accepted for admission. This fee will be credited towards the applicant's University fees, but *will not be returned* if the student fails to register.

On the successful completion of the second year of the Dental program, students who have entered this Faculty from the Faculty of Science at McGill University may, under certain circumstances, apply for their B.Sc. degree. Students wishing to be considered must submit a written application to the office of the Associate Dean of Science at least four months before convocation.

3.2 ENTRANCE TO ADVANCED STANDING

Due to space limitations, applications from transfer students and graduates of foreign dental schools will be considered for admission to the Faculty only if space permits.

3.3 PROFESSIONAL PRACTICE

Applicants are reminded that a University degree in dentistry does not in itself confer the right to practise the profession of dentistry. It is necessary to comply with the dental laws of the country, state, or province in which it is proposed to begin practice. Students, therefore, are advised to register their qualifications at the beginning of their University course with the licensing body in the area in which they intend to practise.

3.4 PROVINCIAL REQUIREMENTS

3.4.1 Province of Quebec

All students who are registered in the first year of the Faculty of Dentistry, McGill University, *must* register with the Order of Dentists of Quebec. The registration fee is $25.00. Further information may be obtained from the Registrar of the Order of Dentists of Quebec, 801 Sherbrooke Street East, Montreal, Quebec H2L 1K4.

Candidates who intend to apply for licence to practise in the Province of Quebec *must* have a working knowledge of the French language.

Candidates who have successfully completed the regular program as given in the Faculty of Dentistry, McGill University, may be granted the licence; provincially, by the satisfactory completion of the Order of Dentists of Quebec progress survey throughout the program and by meeting the French language requirement; and nationally, by registering with the National Dental Examining Board prior to the completion of the final year of studies.

3.4.2 Other Provinces

The following is a list of the provincial Dental Boards in Canada. Students are advised to write to those listed below for information whenever they are in doubt as to the regulations of any province.

ALBERTA — Dr. G. E. Decker, Registrar, Alberta Dental Association, 10240-124 Street, Suite 608, Edmonton T5N 3W8

BRITISH COLUMBIA — Dr. D. J. Yeo, Registrar, College of Dental Surgeons of British Columbia, 1125 West 8th Avenue, Vancouver V6H 3N4

MANITOBA — Dr. E. G. Derrett, Registrar, Manitoba Dental Association, 201-308 Kennedy Street, Winnipeg R3B 2M6

NEW BRUNSWICK — Dr. Harry H. Peter, Executive Director-Registrar, New Brunswick Dental Society, 440 Champlain Street, Saint John E2M 1R9

NEWFOUNDLAND — Dr. D. K. Peters, Registrar, Newfoundland Dental Board, 103 LeMarchant Road, St. John's A1C 2H1

NOVA SCOTIA — Dr. S. G. Bagnall, Secretary-Registrar, Provincial Board of Nova Scotia, P.O. Box 604, Halifax B3J 2R7

ONTARIO — Dr. Kenneth F. Pownall, Registrar, The Royal College of Dental Surgeons of Ontario, 230 St. George Street, Toronto M5R 2N5

QUEBEC — Dr. Marcel Archambault, Registrar, Order of Dentists of Quebec, 801 Sherbrooke Street East, Montreal H2L 1K4

PRINCE EDWARD ISLAND — Dr. I. A. L. Millar, Registrar, Dental Association of Prince Edward Island, R.R. # 5, Montague C0A 1R0

SASKATCHEWAN — Dr. F. R. Smith, Secretary-Registrar-Treasurer, College of Dental Surgeons of Saskatchewan, 811-105-21st Street, Saskatoon S7K 0B3

3.4.3 National Dental Examining Board of Canada

The National Dental Examining Board of Canada issues a certificate to successful candidates which may be registered with the Canadian provincial licensing boards for the purpose of securing a licence to practise. This privilege will be granted only on receipt of a proper application dated not later than March 30th of the year of graduation. Failure to apply by that date will entail the passing of an examination in order to receive the certificate.

Candidates must hold a degree in dentistry from a school of dentistry approved by the Council on Education of the Canadian Dental Association at the time of graduation; or be certified by the Dean or Registrar of a University as a bona-fide senior year student of an approved dental school.

Detailed information may be obtained from the Registrar, National Dental Examining Board of Canada, 100 Bronson Street, Suite 103, Ottawa, Ontario K1R 6G8.

3.4.4 National Dental Examining Board of the U.S.

Students intending to practise in the United States are advised to contact the Secretary, Council of the National Board of Dental Examiners, American Dental Association, 211 East Chicago Ave., Chicago, Illinois 60611. Information should also be obtained from the Secretary of the licensing board of the specific state in which the student intends to practise.

3.4.5 Registration

Registration for the 1976-77 session will be held on Tuesday, September 7. Information and forms for payment of fees will be forwarded in the summer. All lectures will begin on Wednesday, September 8, 1976.

3.5 FEES

The University reserves the right to make changes without notice in its published scale of fees if, in the opinion of the Board of Governors, circumstances so require. Fees are refundable according to the special conditions described in the General Announcement.

TUITION FEES

Annual undergraduate tuition fee (all years)	$570.00
Student Services fee (all years)	70.00
Student Societies fees (all years including Dental Review)	26.50

By instalments: Each of two instalments (plus one half of the applicable equipment supplies and rental fees noted below)	328.25

REPEATING A YEAR

Students repeating a year pay fees as listed above.

EQUIPMENT SUPPLIES AND RENTALS

In First year — Instrument & equipment (rental)	$75.00
— Microscope (rental)	25.00
In Second year — Handpiece (rental-low speed)	25.00
In Second year — Handpiece (rental-high speed)	25.00
In Second year — Instrument & equipment (rental)	125.00
In Third year — Handpiece (rental)	25.00
In Third year — Clinic handpiece (rental)	50.00
In Third year — Instrument & equipment (rental)	150.00
In Fourth year — Handpiece (rental)	25.00
In Fourth year — Clinic Handpiece (rental)	50.00
In Fourth year — Instrument & equipment (rental)	150.00

AD EUNDEM FEE

Transfer students entering any year above the first pay a special *ad eundem* fee of $10.00.

GENERAL REGULATIONS

NEW STUDENTS

Students entering the University for the first time are required to pay their fees either by mail or in person at the Accounting Office.

The first instalment is due 10 days after registration, the second instalment before January 15, 1977.

A late payment fee of $10.00 is charged for payment within the first 30 days; and $25.00 thereafter.

RETURNING STUDENTS

Students who have completed one or more years and intend to register in the succeeding year must pay one half of the total sessional fee by mail or in person to the Accounting Office before August 23, 1976. Instructions for paying fees in advance will be mailed to all returning students, either with their Reports of Standing or a short time later. Students who have been notified by the University of the award of a scholarship, bursary or student loan, and who require this for payment of the first instalment of fees, must obtain from the Student Aid Office, McGill University, permission to delay payment of fees.

The second instalment is due January 15, 1977. A late payment fee of $10.00 is charged for payment within the first 30 days; and $25.00 thereafter.

LATE REGISTRATION

Students registering late must pay their fees at the time of registration, failing which they become subject to the late payment fee and the provisions of the following paragraph:

As soon as possible after the prescribed dates for the payment of fees the Chief Accountant will send to the Registrar's Office a list of the registered students who have not paid their fees. Reports of standing, transcripts of record and diplomas will be withheld until such time as the fees are paid or a satisfactory arrangement is made with the Chief Accountant.

3.6 GRADUATION FEE

Application by students who expect to graduate at the Spring Convocation must be filed by April 1st of each year and by those who expect to graduate at the Fall Convocation by September 1st of each year. An application form will be mailed to each eligible student and must be returned to the Registrar's Office together with the graduation fee of $10.00 by the appropriate date listed above. This fee will cover all expenses in connection with graduation including academic dress. It is the student's responsibility to ensure that his or her name is included in the graduation list.

Note: *Special fees* are given in the *General Announcement.*

3.7 INSTRUMENTS

In addition to the rental fee, certain items of equipment and supplies are purchased by each student. Approximate cost of this equipment is as follows:

First year	$375.00
Second year	$350.00
Third year	$50.00

Books are not included in these amounts.

3.8 MEDALS AND PRIZES

FOURTH YEAR:

Dr. A. W. Thornton Gold Medal awarded to the student in the final year attaining the highest overall standing in the four years of the dental undergraduate program.

Dr. J. K. Carver Medal awarded to the student in the final year attaining the second highest overall standing in the four years of the dental undergraduate program.

Dr. A. L. Walsh Prize awarded to the student in the final year for meritorious achievement in Oral

Medicine throughout the clinical undergraduate program.

Dr. W. G. Leahy Prize awarded to the student in the final year for meritorious achievement in Restorative Dentistry throughout the clinical undergraduate program.

THIRD YEAR:

Dr. Gerald Franklin Prize awarded to the student attaining the highest standing in the examinations in the third year of the dental undergraduate program.

International College of Dentists Prize (Canadian Section) awarded to the student attaining the second highest standing in the third year of the dental undergraduate program.

SECOND YEAR:

Dr. D. P. Mowry Prize awarded to the student attaining the highest standing in the examinations in the second year of the dental undergraduate program.

Dr. I. K. Lowry Prize awarded to the student attaining the second highest standing in the second year of the dental undergraduate program.

Dr. K. I. Melville Prize awarded to the student attaining the highest aggregate standing in the Basic Science subjects in the first two years of the dental undergraduate program.

Dr. W. C. Bushell Prize awarded to the student attaining the highest aggregate standing in Dental Anatomy and Applied Sciences in the first two years of the dental undergraduate program.

FIRST YEAR:

Dr. Arthur S. Solomon Prize awarded to the student attaining the highest standing in the examinations in the first year of the dental undergraduate program.

Dr. M. Donigan Prize awarded to the student attaining the second highest standing in the first year of the dental undergraduate program.

GRADUATE PRIZE:

Dr. L. A. Cohn Prize awarded to the student in the Diploma or Masters program in Prosthodontics and Restorative Dentistry for outstanding achievement.

3.8.1 Scholarships, Bursaries and Loans

Details of University and other scholarships and bursaries are given in the *Undergraduate Scholarships and Awards Announcement*, which may be obtained from the Registrar's Office.

The University has a fund from which loans may be made to students of good academic standing.

The Order of Dentists of Quebec has created a loan fund to assist students of the Faculty who are registered with the Order. The W. K. Kellogg Foundation Loan Fund and the Dental Students' Society Dean D. P. Mowry Memorial Fund are available to assist any student registered in the Faculty.

Loans are made only to students in the upper years. Applications for all loans should be made to the Student Aid Office.

3.9 CLINICAL FACILITIES

The McGill University Dental Clinic is an integral part of the Department of Dentistry of the Montreal General Hospital. At the Clinic, under the guidance of the dental staff, students are taught to carry out all phases of clinical dentistry and related laboratory procedures.

The Third and Fourth year students attend this Clinic daily except for such time as may be taken up by lectures or other University work. Students entering the Third year must spend the period between the last of the regular May examinations and the middle of June in the Clinic.

An abundance of teaching material in all aspects of dentistry is always available. Integration with the Montreal General Hospital offers the facilities of all departments in the Hospital and allows the students to observe a wide variety of interesting and unusual cases under treatment.

Graduate students, interns, registered nurses, and dental assistants are in attendance.

3.10 LIBRARY

Undergraduate dental students are fortunate to have, for their use, a modern dental library on the first floor of the Strathcona Anatomy and Dentistry Building. The Library's collection includes the preclinical sciences, as well as dentistry and periodical literature. There is a full time librarian in charge as well as assistants to enable the staff and students to obtain the advice and help they require. The library is open daily and in the evenings for the use of the dental community.

4 STUDENT SERVICES

4.1 OFFICE OF THE DEAN OF STUDENTS

The Dean of Students has the responsibility for the provision of and the coordination of all student services and works closely with the Students' Society in the interests of all students. The Dean and Associate Dean are available for consultation with individual students who may wish to discuss problems not already provided for by one or other of the existing services. The Office of the Dean of Students maintains an "open-door" policy and students are invited to make use of these services at any time.

Location:	3465 Peel St.
General Information:	392-4551

4.2 CHAPLAINCY SERVICE

A counselling service is available through the campus chaplains independent of McGill administration. This service exists to serve the needs of all McGill students, families and staff through individual counsel or group encounter. The service is related to areas such as marital problems, divorce, premarriage counselling, value systems and group dynamics. Open meetings on a variety of religious and campus topics are regularly sponsored by the Chaplains.

Social Service projects are sponsored in conjunction with Hillel, Newman and S.C.M. Yellow Door and opportunities are offered to work with the poor, aged, children and prisoners.

At 3484 University Street there is a lounge and reading area where books and periodicals are available to students free of charge. Information concerning individual denominational services is also available.

Location:	3484 University St.
General Information:	392-5890

4.3 STUDENT AID & FOREIGN STUDENT ADVISOR'S OFFICE

The Student Aid section of this office handles all matters relating to financial assistance whether University, Provincial or Federal. Non-Canadian students requiring certification of registration and/or letters of advice to Foreign Exchange Control Boards obtain these from this office.

The Foreign Student Adviser section of this office deals with all matters which may affect non-Canadian students such as problems with the Canadian Department of Manpower and Immigration and information concerning the necessity of the compulsory health insurance.

Location:	3465 Peel St.
General Information:	392-5206

4.4 STUDENT COUNSELLING SERVICE

This office provides a place where students of all faculties may discuss any problem confidentially. Among the services offered are individual counselling, human awareness groups, psychological assessment, vocational testing, effective reading courses, career planning and the Career Information Library. The service is free to all McGill students.

Location:	522 Pine Ave., W.
General Information:	392-5119

4.5 HEALTH SERVICE

When students enrol at McGill University they have available to them a full range of medical service provided by the McGill University Health Service. Medical clinics operate daily, five days of the week from 9:00 a.m. — 5:00 p.m. A physician is always on call at night and on weekends and he can be contacted by dialing the Health Service number. There are both male and female physicians on staff as well as a competent staff of college health nurses.

This service is available to all full-time students, undergraduate and post-graduate. Students are asked to bring their Medicare cards or equivalent. *All information is completely confidential and forms no part of any University record.*

Many students are seen for discussion about sexual life, contraception, drug problems and venereal disease. We urge students who suspect that they have V.D. to consult us. We invite students who are concerned about a drug problem to contact the Health Service and most particularly the Mental Health Section.

Part of the Health Service consists of a *Mental Health Service* which makes available to students psychiatric and psychological help. Students who wish to come are advised to make an appointment. If a psychological emergency arises the student should come directly to the Mental Health Service or phone immediately. All contacts by students with this service are kept completely confidential.

PARTICIPATION IN ATHLETICS: A student in any academic year wishing to participate in heavy contact athletics, e.g. football, will be required by the Athletics Department to undergo a physical examination at the University Health Service.

In order to ensure medical coverage while a student at McGill, Canadian students from provinces other than Quebec are advised to consult with the medicare and hospital insurance offices of their own province before coming to McGill. This is particularly important since residents of other provinces are not covered by Quebec Medicare and Hospitalization while studying at McGill.

Non-Canadian students, whether undergraduate or post graduate, are obliged to enrol in a medical and hospital insurance program. Consequently, the student and his dependents are covered to a large extent for medical and hospital expenses during the academic year. Information concerning this program can be obtained at the general office of the Health Service.

Location:	517 Pine Avenue West
Appointment and General Office	392-5441
Mental Health Section	392-5449

4.6 RESIDENCE ACCOMMODATION

Students who wish to apply for residential accommodation must do so on special forms which may be obtained from the Secretary, Co-Ed Residences, McGill University, 3935 University Street, Montreal, Quebec, H3A 2B4.

4.7 OFF-CAMPUS HOUSING SERVICE

Students unable to secure a room in residence should get in touch with the

Off-Campus Housing Service
Dean of Students' Office
3465 Peel Street, Room 401
Montreal, Quebec H3A 1W7
General Information: 392-4554

This office maintains an up-to-date computer listing of available off-campus housing, including the names of families willing to take in student boarders and other students seeking roommates.

4.8 HOUSING FOR MARRIED STUDENTS

The University maintains a limited number of apartment units in several nearby locations for married students. As the demand for these apartments greatly exceeds the number of vacancies occurring each year, applications are restricted to married, full-time undergraduate and graduate students who have not yet attained the Ph.D or M.D. degree or equivalent. Further information and application forms may be obtained from the Real Estate Office, Apt. P 1, 3474 Hutchison Street, Montreal, Que. H2X 2G7.

4.9 STUDENT PLACEMENT

The Canada Manpower Centre provides a comprehensive placement service to McGill students in the areas of part-time, summer and permanent employment. The principal aims of the service are to encourage employers to make available a wide variety of job opportunities to McGill students; to assist students in finding suitable employment, by providing information on the labour market and arranging interviews with prospective employers; to encourage students to prepare for a career by doing their own research into the labour market, through library facilities, seminars, summer and part-time jobs.

Location: 762 Sherbrooke St. W.
General Information: 283-4411

4.10 BOOKSTORE

The McGill University Bookstore, located in the Bronfman Building at 1001 Sherbrooke Street West, provides a comprehensive stock of current textbooks, reference material and academic supplies as well as items of general interest. It is administered by a Senate committee representing the students, the faculty and the administration.

4.11 ATHLETICS

McGill's facilities for athletics, physical education, and recreation are centered in the Sir Arthur Currie Memorial Gymnasium, the Percival Molson Memorial Stadium and the McGill Winter Stadium. Sports facilities in the gymnasium include basketball, squash, badminton, and volleyball courts; swimming pool; facilities for gymnastics, wrestling, fencing, judo, and track. For the use of all women students of the University, staff and graduates, the Garfield Weston Swimming Pool is available.

The physical education programs for men and women provide instruction for students in various sports.

Numerous intramural and recreational sports clubs provide opportunities for students to participate in sports for relaxation and to represent their faculty or residence on intramural teams of their choice.

On the intercollegiate level McGill participates in sports sponsored by the Quebec Universities Athletics Association and the Ontario Women's Intercollegiate Athletics Association.

Complete information concerning athletics may be obtained from the Athletics Office in the Currie Gymnasium.

4.12 EXTRA-CURRICULAR ACTIVITIES

There are over 250 activities and clubs which students may join. These include international clubs, religious groups, political clubs, fraternities, communications (Radio McGill) and some 50 miscellaneous groups (such as science clubs, literary, theatrical and musical societies, chess and bridge clubs, and the Voyageurs' Society).

4.13 STUDENT ORCHESTRA, CHOIR, AND WIND ENSEMBLE

The Student Orchestra and Choir of the Faculty of Music as well as the McGill Wind Ensemble have some vacancies for amateur musicians. Advanced instrumentalists (strings, winds, harp, percussion), or experienced choir singers who would like to become regular members of the Orchestra, the Choir, or the Wind Ensemble, should contact the office of the Faculty of Music for further information (Telephone 392-4501).

5 PROGRAM FOR THE DEGREE OF D.D.S.

5.1 CURRICULUM*

Candidates for the degree of Doctor of Dental Surgery must have completed the requirements for entrance as noted in Section 3.1, before entering upon the four-year program in this Faculty.

The dental curriculum is as follows:

FIRST YEAR

Anatomy, General
Behavioural Science
Biochemistry
Dental Anatomy and applied Sciences
-Dental Materials
-Occlusion
-Operative Dentistry
-Prosthodontics (Fixed)
Epidemiology
Growth and Development
Histology, General
Histology, Oral
History, Dental
Medicine
Orientation in Dentistry
Physiology
Statistics

SECOND YEAR

Anxiety and Pain Control
Community Dentistry
Dental Materials
Microbiology and Immunology
Occlusion
Operative Dentistry
Orthodontics
Nutrition
Pathology, General
Pathology, Oral
Periodontics
Pharmacology, General
Preventitive Dentistry
Prosthodontics (Fixed)
Prosthodontics (Removable)
Radiology

THIRD YEAR

Anaesthesiology
Behavioural Science
Dental Pharmacology and Therapeutics
Endodontics
Epidemiology and Dental Health Care
Medicine
Occlusion
Operative Dentistry
Oral Diagnosis and Pathology
Oral Diagnosis and Treatment Planning Seminar
Oral Surgery
Orthodontics
Paedodontics
Periodontics
Practice Administration
Prosthodontics (Fixed)
Prosthodontics (Removable)
Radiology

FOURTH YEAR

Endodontics
Essay
Jurisprudence
Occlusion
Oral Surgery
Operative Dentistry
Oral Medicine Seminar
Orthodontics
Paedodontics
Paedodontic Seminar
Periodontics
Practice Administration
Prosthodontics (Fixed)
Prosthodontics (Removable)
Restorative Dentistry Seminar

590-425P Essay: Final year students must write an essay of approximately 4,000 words. The subject will be announced early in September.

** It should be understood that this curriculum is subject to change without notice.*

5.2 REQULATIONS GOVERNING EXAMINATIONS AND ADVANCEMENT

Occasional oral and written examinations are held throughout the session to test the progress of the student. Final examinations in most subjects are held at the end of the session.

A minimum of 60 per cent in each subject is required to pass and 80 per cent for Honours.

At the discretion of Faculty, the following regulations will apply:

All examinations in each year must be passed before a student is allowed to advance to the next.

Candidates who fail at the regular examinations in not more than two subjects may be allowed to sit supplemental examinations before the beginning of the following session. These examinations are held during the week preceding the regular opening of the session.

Candidates who fail in three subjects at the regular examinations or who are unsuccessful in the supplemental examinations may be permitted to repeat the year.

Candidates who fail at the regular examinations in more than three subjects will be required to withdraw.

A student repeating a year must attain, at the regular examination, satisfactory standing in all courses. Failing this, the student will be required to withdraw.

A single grade D (60%) is considered a passing mark. In the presence of additional D or F grades, all D grades are considered failures.

A student who, in any year, fails in a subject in which practical or clinical work is necessary, may be required to fulfil prescribed additional clinical or laboratory work before presenting himself for supplemental examination. A fee may be attached to these requirements.

The Faculty reserves the right to require the withdrawal of any student at any time, if, in the opinion of his instructors, he displays unprofessional conduct or is incompetent.

The quality of the written language will be considered in evaluating examinations.

Applications for supplemental examinations must be made to the Dean's office at least 30 days before the date set for each examination, and must be accompanied by a fee of $10.00 for each examination.

Subjects comprising practical and theoretical components shall be reported as a single mark in final examinations.

5.3 QUALIFICATIONS FOR THE DEGREE

1. Candidates for the degree of Doctor of Dental Surgery shall have attended courses of instruction for four full sessions in the Faculty of Dentistry of this University.
2. Students of other universities who may be admitted to advanced standing in this University are required to pass a qualifying entrance examination and thereafter the same examinations as regular students of this University.
3. Candidates for the degree, admitted in advanced standing as noted above, shall have completed at least the final year of the course at this University.
4. Every candidate for the degree shall provide evidence of satisfactory completion of all of the required subjects which comprise the dental curriculum.

5.4 DENTAL INTERNSHIPS

5.4.1 Internship and Residency Programs

a) Rotating Internships

A rotating internship program is offered at the Montreal General Hospital, in conjunction with the Faculty of Dentistry, beginning *July 1* each year. Applications for internships should be received prior to *December 31* in any year. Further details may be obtained by writing to the Dental Surgeon-in-Chief.

b) First Year Residency in Paedodontics

One candidate is selected each year for this one-year program beginning *July 1*. For further information apply to the Director of Dental Services, Montreal Children's Hospital, 2300 Tupper Street, Montreal, Que. H3H 1P3.

c) Residency Program in Oral Surgery leading to M.Sc. degree

One candidate is selected each year for this program beginning *July 1*. For further information apply to the Department of Oral Surgery, Faculty of Dentistry, McGill University, P.O. Box 6070, Station A, Montreal, Que. H3C 3G1.

d) Residency in Prosthodontics

One candidate is selected each year for this program beginning *July 1*. For further information apply to the Department of Prosthodontics, Faculty of Dentistry, McGill University, P.O. Box 6070, Station A, Montreal, Que. H3C 3G1.

5.4.2 Student Interns

In the senior year each student serves as a student intern for a minimum period of two weeks. During this time he lives in the Montreal General Hospital with room and uniforms provided. He serves each morning in the Oral Diagnosis and/or Screening Clinics and is on call with the resident intern for the remainder of the entire day for the diagnosis and dental treatment of hospitalized cases both on the wards and in the main hospital operating theatres with the attending oral surgeons. In this way the student is afforded an excellent opportunity to observe and to participate in dental services under hospital conditions. During this student internship, the student functions in a similar capacity for a few days at the Montreal Children's Hospital.

5.5 DENTAL OFFICER TRAINING PLAN

The Dental Officer Training Plan is offered by the Canadian Forces to undergraduates interested in a military career following graduation.

The plan is designed to assist dental students financially, in that it provides for payment of tuition, instruments, supplies and books, and in addition, pay in accordance with rank. The plan also provides training during the summer months for the undergraduate as an officer in the Armed Forces.

To be eligible a student must be able to meet the Canadian Forces standards for enrolment and be academically acceptable, without condition, to any one of the four professional years of the dental faculty.

Full details of the Dental Officer Training Plan may be obtained from Canadian Forces Recruitment and Selection Unit, 1254 Bishop Street, Montreal, Quebec H3G 2E3.

6 COURSES OF INSTRUCTION

DIVISION OF COMMUNITY DENTISTRY

6.1 BEHAVIOURAL SCIENCE

Professor
— H. Caplan, B.Sc., M.D., C.M.(McG.), F.R.C.P.S.(Course Director)
Associate Professor
— J. W. Stamm, D.D.S.(Alta.), D.D.P.H., M.Sc.D.(Tor.)

First Year (524-161P)

This course aims at facilitating the student's familiarity with the impact of disease on a patient's style of living, his socio-economic security, and his family. It will cover tasks in life as well as style in living from infancy to old age. Sessions involve presentation of live patients, selected films and audio-visual material. Ample time is devoted to small group discussion.

6.2 EPIDEMIOLOGY AND DENTAL HEALTH CARE

Assistant Professor
— N. Steinmetz, B.Sc., M.D., C.M.(McG.), M.P.H. (Mich.), F.R.C.P.(C) (Course director)

First Year (513-121P)

In the first quarter of the first year, a series of lectures and symposia presented on the Social Aspects of Health Care dealing with the impact of disease on, and the doctors' responsibility to the community. Subjects include the present health care system in Quebec, how it is used by doctors and patients, doctor payment, nutrition, and the drug industry.

Professors
— R. O. Oseasohn, B.S.(Tufts), M.D., C.M.(S.U.N.Y.), F.A.C.P.
— S. S. Lee, B.S., M.D., M.P.H., Dr. P.H.(Yale)
Associate Professor
— J. W. Stamm, D.D.S.(Alta.), M.Sc., D.D.P.H.(Tor.) (Course Coordinator)

Third Year (513-311P)

This course consists of lectures and seminars designed to introduce students to the methods used in the assessment of health in a population. With this background in health evaluation, the student is introduced to modern approaches in the provision of community health services. Various facets of dental health care delivery are discussed. (Text — David F. Striffler, *The Dentist, His Practice, and His Community.)*

6.3 GROWTH AND DEVELOPMENT IN CHILDREN

Professor
— G. McKay, B.A.(Dal.), M.A.(Yale & Dal.), Ed.D.(Harv.) (Course Director)

First Year (590-113P)

This course aims to familiarize the student with cognitive, physical, and behavioural growth of children. In so far as successful practice depends on the understanding of the total child, this program is essential for the future dentist.

6.4 HISTORY, DENTAL

Guest Lecturers
— C. C. Bourne, B.Sc., D.D.S.(McG.)
— M. Hebert, B.A.(Montr.), D.D.S.(McG.)

First Year (590-112P)

A consideration of the evolution of dentistry as a profession from *Zinjanthropus hominid* to the present, comparing primitive conditions and methods of the past with those of today with special attention to the contributions of outstanding personalities and events.

6.5 JURISPRUDENCE, DENTAL

Lecturer
— P. Graham, B.A., B.C.L.(McG.)

Fourth Year (590-412P)

A discussion of the Dental Act, the Health Act, and other laws governing the practice of dentistry.

The responsibility of the dentist under the laws of the Province and his position as defendant in suits for damages, as plaintiff in suits for fees and as expert witness in cases between other parties and his use of techniques for identification from dental remains are explained through the analysis of various specific cases. Legal and taxation aspects of the business arrangements of dental practice are also considered. (Text — Harvey Sarner, *Dental Jurisprudence)*

6.6 NUTRITION

Lecturer
— C.J. Ayers, B.Sc., M.Sc.(McG.), M.Sc.(Lond.)

Second Year (590-227P)

This course consists of lectures and discussion on nutrition and diet as they affect both systemic and oral health. The emphasis is on nutritional status assessment and diet counselling with particular reference to dental health. (Text — Abraham E. Nizel, *Nutrition in Preventive Dentistry; Science and Practice)*

6.7 PRACTICE ADMINISTRATION

Lecturers
— J. A. Claener, D.D.S.(McG.) and Staff

Fourth Year (590-417P)

A study of the orderly arrangement and administration of all the useful facilities and services needed for a professional practice, based on needs, demands, regulations, system, analysis, psychology and common sense in dealing with people.

It is concerned with all the functions of the dental office which are not part of operative, technical or diagnostic procedures. (Text — Robert K. Stinaff, *Dental Practice Administration;* H. C. Kilpatrick, *Work Simplification in Dental Practice.)*

Third Year (590-317P)

An introduction to the spectrum of available dental equipment and supplies and how they are most effectively used in practice of general dentistry.

6.8 PREVENTIVE DENTISTRY

Associate Professors
— J. W. Stamm, D.D.S.(Alta.), D.D.P.H., M.Sc.D.(Tor.)
— R. F. Harvey, D.D.S.(McG.), F.R.C.D.(C), F.A.C.D., F.I.C.D.

Assistant Professor
— H. G. Weld, D.D.S.(Northwestern), D.D.P.H., M.Sc.D.(Tor.)

Lecturer
— J. Claener, D.D.S.(McG.)

Second Year (590-228P)

This course consists of lectures to give a scientific understanding of the initiation and progression of the major dental diseases. In addition, the student is introduced to the most important techniques and agents which are used in the prevention of these diseases. Included is a look at the current and future research in this field. (Texts — *The Dental Clinics of North America, October, 1972;* Ernest Newburn, editor, *Fluorides and Dental Caries;* Simon Katz, James L. McDonald, George K. Stookey, *Preventive Dentistry in Action.)*

6.9 STATISTICS

Associate Professor
— J. W. Stamm, D.D.S.(Alta.), D.D.P.H., M.Sc.D.(Tor.)

First Year (590-126P)

This course consists of an introduction to the principles of descriptive and inferential statistics as applied to dental science. The course stresses the proper collection, tabulation and presentation of data. In addition, it is intended to familiarize the student with those statistical concepts which will help in the interpretation of dental professional literature. (Text — Olive Jean Dunn, *Basic Statistics: A Primer for the Bio-medical Sciences).*

DIVISION OF PREVENTIVE AND RESTORATIVE DENTISTRY

6.10 DENTAL ANATOMY AND APPLIED SCIENCES

Associate Professor
— W. D. Sanders, B.Sc.(Sir G. Wms.), D.D.S.(McG.) (Chairman)
— J. D. Townsend, B.Sc.(U.B.C.), D.D.S.(McG.), M.S.D.(Wash.)

Lecturers
— J. D. Fenwick, B.Sc., D.D.S.(McG.)
— C. L. Moran, B.Sc., D.D.S.(McG.)
— D. T. Shizgal, D.D.S.(McG.)
— M. D. Shizgal, B.Sc., D.D.S.(McG.)

Demonstrators
— A. Androutsos, D.S.(Athens), D.D.S.(McG.)
— J. Bartos, M.U.Dr.(Purzyrije), D.M.D.(Alabama)
— S. S. Blum, B.Sc., D.D.S.(McG.)
— I. A. Cameron, B.Sc.(Sir G. Wms.), D.D.S.(McG.)
— G. M. Griffiths, D.D.S.(McG.)
— C. L. Herscovitch, D.D.S.(McG.)
— J. M. Little, B.A.(Loyola), D.D.S.(McG.)
— E. Ostro, B.Sc.(Sir G. Wms.), D.D.S.(McG.)
— T. C. Postans, D.D.S.(McG.)
— I. Seltzer, B.Sc., D.D.S.(McG.)
— A. F. Small, D.D.S.(McG.)
— M. Szikman, B.Sc., D.D.S.(McG.)
— D. Taylor, D.D.S.(McG.)
— A. Tekela, D.D.S.(McG.)

DENTAL ANATOMY

First Year (590-114P)

Instruction in the form and function of normal teeth and supporting tissues, and the development of manual dexterity in the student through drawings and waxing procedures, and sectioning of natural teeth.

APPLIED SCIENCES

First Year (590-115P)

An introduction to the theory and practical application of procedures relating to fixed prosthodontics and to operative dentistry.

OCCLUSION

First Year

Occlusal concepts are developed through an appreciation of the anatomy and physiology of the masticatory system. (Text — Wheeler, *Textbook of Dental Anatomy and Physiology,* 4th. ed.: Saunders.)

6.11 DENTAL MATERIALS

Assistant Professor
— J. M. Gourley, B.Sc., Ph.D.(Nott.)
Lecturer
— W. Kowal, B.A., D.D.S.(McG.)
— M. Pinchuk, B.Sc., D.D.S.(McG.)

First Year (590-115P)

Introduction to basic physical and chemical properties of dental materials. Emphasis is made on those materials involved in casting and fabrication of fixed dental prostheses.

Second Year (590-215P)

Presentation in greater detail of the physical and mechanical properties as well as chemical and structural features of clinical dental materials. (Texts — R. W. Phillips, Skinner; *Science of Dental Materials,* 7th Edition; Peyton and Craig, *Restorative Dental Materials, 5th ed.)*

6.12 ENDODONTICS

Associate Professor
— B. Sedlezky, B.Sc., D.D.S.(McG.) (Chairman)
Lecturers
— R. J. C. David, D.D.S.(McG.)
— P. Lawrence, B.A., D.D.S.(N.Y.U.)
— D. J. Munro, B.A., D.D.S.(McG.)
— B. H. Wiener, B.Sc., D.D.S.(McG.), M.Sc.D.(Boston)
Demonstrators
— D. Auerbach, B.Sc., D.D.S.(McG.), M.Sc.D.(Boston)

Fourth Year (590-411P)

A concentrated course in the theory and clinical practice of endodontics, correlated with the teachings of the Departments of Microbiology and Immunology, Pathology, Histology, Oral Surgery and Dental Anatomy given midway through the junior year and followed by weekly clinical sessions until the end of the senior year. (Texts — L.I. Grossman, *Root Canal Therapy;* Sommer, Ostrander and Crowley, *Clinical Endodontics;* E. Nicholls, *Endodontics;* Ingle, *Endodontics,* Lea and Febiger; Bender and Seltzer, *The Pulp,* Lippincott.)

6.13 OPERATIVE DENTISTRY

Associate Professor
— J. V. Blomfield, B.D.Sc.(Melbourne), D.D.S., Dip.Pros.(Rest.Dent.) (McG.), M.Sc.(Lond.) (Acting Chairman)
Professors
— E. R. Ambrose, D.D.S.(McG.), F.I.C.D., F.A.C.D.
— H. Rosen, B.Sc., D.D.S.(McG.), F.I.C.D., F.A.C.D.
Associate Professors
— W. D. Sanders, B.Sc.(Sir G. Wms.), D.D.S.(McG.)
— J. D. Townsend, B.Sc.(U.B.C.), D.D.S.(McG.), M.S.D.(Wash.)
— G. H. G. Weinlander, D.K.F.M.(Vienna), D.D.S.(McG.), Dip. Paedo.(Mich.), F.I.C.D.
Assistant Professors
— J. R. Fong Chong, B.Sc.(St. F.X.), D.D.S.(McG.)
— H. Greenwald, B.Sc., D.D.S.(McG.)
— M. Shevell, B.Sc., D.D.S.(McG.)
— H. G. Weld, D.D.S.(Northwestern), D.D.P.H., M.Sc.D. (Tor.)
Lecturers
— N. I. Hanna, B.Sc.Agr., D.D.S.(McG.)
— P. Hwang, D.D.S.(Seoul), D.D.S., Dip. Pros.(Rest. Dent.)(McG.)
— I. I. Silver, B.A., D.D.S.(McG.)
— D. Solomon, D.D.S.(McG.)
— J. W. Whitehead, B.A.(N.C.), D.D.S.(McG.)
Demonstrators
— S. Blanshay, B.Sc., D.D.S.(McG.)
— S. S. Blum, B.Sc., D.D.S.(McG.)
— A. St. O. Byer, B.Sc., D.D.S., Dip Pros. (Rest. Dent.) (McG.)
— A. Grzetic, D.D.S.(Argentina), Dip.Pros.(Rest. Dent.)(McG.)
— A. S. Israel, B.Sc., D.D.S.(McG.)
— F. A. Kay, B.Sc.(Loyola), D.D.S.(McG.)
— I. Seltzer, B.Sc., D.D.S.(McG.)

Second Year (590-214P)
Third Year (590-314P)
Fourth Year (590-414P)

Students receive the basic and, where indicated, some advanced theoretical laboratory and clinical instruction in: diagnosis and treatment planning; prevention; the "biomechanical" treatment for diseased and/or traumatized tooth structure; the anatomical restoration of individual teeth in all age groups to physiologic form and function with the restorative materials generally used by the dental practitioner. (Texts — Howard, *Atlas of Operative Dentistry:* Mosby; Bell and Grainger, *Basic Operative Dentistry Procedures:* Lea & Febiger; Gilmore, *Textbook of Operative Dentistry:* Mosby; Schultz, *Operative Dentistry:* Lea & Febiger; Ingraham and Koser, *An Atlas of Gold Foil and Rubber Dam Procedures:* West Orange County, California.)

6.14 ORTHODONTICS

Associate Professors
— M. D. Rennert, B.Sc., D.D.S.(McG.), M.S.(Buffalo), F.R.C.D.(C), F.I.C.D. (Chairman)
— R. W. Faith, B.A., D.D.S.(McG.), Cert. Ortho. (Tufts), F.R.C.D.(C), F.I.C.D.
Lecturers
— S. S. Miller, B.Sc., D.D.S.(McG.), Cert. Ortho.
(Oregon)

— M. Weinstock, D.D.S.(Tor.), Cert. Ortho. (Harv.), Ph.D.(McG.)

Demonstrators

— O. S. Kopytov, B.Sc., D.D.S.(McG.), M.Sc.(Minn.)
— H. L. Levitt, B.Sc., D.D.S.(McG.), Cert. Ortho.(Montr.), F.R.C.D.(C)
— R. Nadeau, D.D.S.(McG.), M.S.(Montr.)
— W. Northway, B.A.(Kenyon), D.D.S.(Mich.), Cert. Ortho.(Montr.)
— L. Prosterman, B.A., D.D.S.(McG.), M.S.D.(Temple), F.R.C.D.(C)

Guest Lecturers

— L. Bossé, D.D.S., M.S.(Montr.)
— M. Cardozo, B.A.(Brooklyn), M.A.(Col.)
— H. T. Oliver, D.D.S.(McG.), Dip. Ortho.(Montr.), F.R.C.D.(C), F.A.C.D., F.I.C.D.

Second Year (590-215P)
Third Year (590-315P)
Fourth Year (590-415P)

Courses comprise lectures, technique exercises, treatment of selected cases and seminars.

The purpose of the course is to present as much theoretical background as possible and to make the student familiar with diagnostic procedures and with the preventive, interceptive and limited corrective procedures that can be undertaken in a general dental practice. (Texts — Graber, *Orthodontics,* 3rd ed.: W.B. Saunders Co., 1972; Moyers, *Handbook of Orthodontics:* The Year Book Publishers Inc., 3rd. Ed., 1973; Sassouni, *Orthodontics in Dental Practice:* Mosby, 1971)

6.15 PAEDODONTICS

Associate Professor

— G. H. G. Weinlander, D.K.F.M.(Vienna), D.D.S.(McG.), F.I.C.D.(Chairman)

Professor

— E. R. Ambrose, D.D.S.(McG.), F.I.C.D., F.A.C.D.

Assistant Professors

— C. T. Dixter, B.Sc.(McG.), D.D.S.(Montr.), Cert. Paedo.(Tufts)
— R. P. Dundass, D.D.S.(McG.), M.S.D.(Mich.)

Lecturer

— P. R. Weinstein, B.Sc., D.D.S.(McG.), Cert. Paedo.(Roch.)

Demonstrator

— A. Felgar, B.A.(Sir G. Wms.), D.D.S.(McG.), M.Sc.D.(Boston)

Third Year (590-316P)

Lecture course on child management, treatment planning, operative procedures, management of injuries to teeth and preventive dentistry for children.

A concentrated laboratory course covers routine cavity preparations, amalgam restorations and stainless steel crown adaptation on deciduous manikin teeth, endodontic procedures on extracted deciduous teeth, and a splinting exercise.

Clinical dentistry for children commences following the laboratory course.

Fourth Year (590-416P)

Clinical dentistry for children in the University Dental Clinic. (Texts — Finn, *Clinical Pedodontics:* Saunders; Ellis, *The Classification and Treatment of Injuries to the Teeth of Children:* Year Book Publishers; Law, Lewis, Davis, *An Atlas of Pedodontics;* Saunders; McDonald, *Dentistry for the Child and Adolescent:* Mosby)

6.16 PERIODONTOLOGY

Associate Professors

— R. F. Harvey, D.D.S.(McG.), F.R.C.D.(C), F.A.C.D., F.I.C.D. (Chairman)
— P. J. Gitnick, D.D.S.(McG.), F.I.C.D., F.A.C.D., F.R.C.D.(C)

Assistant Professors

— S. Galperin, B.Sc.(Bogota), D.D.S.(Col.), Cert. Perio.(N.Y.U.)
— E. M. Hershenfield, B.Sc., D.D.S.(McG.), M.Sc.D.(Boston), F.R.C.D.(C)
— F.I. Muroff, B.Sc., D.D.S. (Detroit), M.Sc.D.(Boston), F.R.C.D.(C)

Lecturers

— E. Shore, B.Sc., D.D.S.(McG.), Cert. Perio. (Tufts)
— M. Stutman, B.Sc., D.D.S.(McG.), M.Sc.D.(Boston)
— A. S. Wainberg, B.Sc., D.D.S.(McG.), Cert. Perio. (Tufts), F.R.C.D.(C)

Demonstrators

— F. Fagan, B.Sc.,D.D.S.(McG.), Dip. Perio. (Tor.)
— G.J. Quint, B.Sc., D.D.S.(McG.), Cert. Perio.(Temple)
— A. Shuster, B.Sc.,D.D.S.(McG.), Cert. Perio. (Temple)
— M. Werbitt, B.Sc., D.D.S.(McG.), M.Sc.D.(Boston)

First Year (590-118P)

Introductory lectures are presented, related to oral hygiene procedures and the role of the basic sciences.

Second Year (590-218P)

Basic lecture series and introduction to clinical experience; laboratory exercises integrating teaching with other departments of the Restorative Division.

Third Year (590-318P)

Concentrated lecture series involving all aspects of recognition, diagnosis, prognosis, treatment planning and specifics of therapy; weekly seminars reviewing the literature and specific subjects are also presented by the students. Clinical periods are

held weekly as well as periods in which Junior students assist their Senior partners in seminars and clinics.

Fourth Year (590-418P)

Lectures cover more in depth studies of research of therapy and "The Patient". More advanced forms of periodontal therapy are undertaken in conjunction with a multi-disciplinary approach to overall therapy; seminars on treatment planning are held weekly with other disciplines. Demonstrators are present or available in all clinics in addition to the specific Periodontics clinics. (Texts — A Manual of the Department is presented which covers all aspects of the course; Goldman & Cohen, *Periodontal Therapy,* 5th. ed., Glickman, *Clinical Periodontology,* 4th ed; Grant, Stern & Everett, *Orban's Periodontics,* 4th ed.; Ramfjord & Ash: *Occlusion,* 2nd ed.; Reference — J. G. Jones *Physiological Role of Dental Occlusion in the Masticatory System,* Vol. 1 & 2).

6.17 FIXED PROSTHODONTICS

Associate Professors
- — J. D. Townsend, B.Sc.(U.B.C.), D.D.S.(McG.),M.S.D.(Wash.) (Chairman)
- — D. Kepron, B.Sc.(Man.), D.D.S.(McG.), M.Sc.(Mich.),F.R.C.D.(C)
- — R. G. Jones, B.A., D.D.S.(McG.), M.S.D.(Indiana), F.R.C.D.(C)

Assistant Professors
- — J. V. Blomfield, B.D.Sc. (Melbourne), D.D.S.(McG.), M.Sc.(London), Dip. Pros.(Rest. Dip.)(McG.)
- — J. R. Fong Chong, B.Sc.(St. F.X.), D.D.S.(McG.)
- — J. M. Gourley, B.Sc., Ph.D.(Nott.)
- — H. Ptack, D.D.S.(McG.), Cert.(Ill.)
- — A. G. Pullinger, B.D.S.(Lond.), D.D.S.(McG.)

Lecturers
- — J. D. Fenwick, B.Sc., D.D.S.(McG.)
- — S. M. Kennedy, D.D.S.(McG.), M.Sc.(Boston)
- — E. Ostro, B.Sc.(Sir G. Wms.), D.D.S.(McG.)
- — M. Pinchuk, B.Sc., D.D.S.(McG.), Cert. Pros.(Boston)
- — M. D. Shizgal, B.Sc., D.D.S.(McG.)
- — H. Skurnik, B.Sc., D.D.S.(McG.)

Demonstrators
- — A. Androutosos, D. S.(Athens), D.D.S.(McG.)
- — J. Bartos, M.U.Dr.(Purzyrije), D.M.D.(Alabama)
- — D. V. Bridger, B.Sc.(Bishop's), D.D.S.(McG.)
- — P. V. Goldberg, B.Sc., D.D.S.(McG.) M.S.D.(Wash.)
- — J. C. Grisdale, B.A., D.D.S, Dip. Pros.(Rest.Dent.)(McG.)
- — J. M. Little, B.A.(Loyola), D.D.S.(McG.)
- — P. Stutman, B.Sc., D.D.S.(McG.) M.Sc.D.(Boston)
- — D. Taylor, D.D.S.(McG.)

Visiting Lecturers
- — J. Aufreiter, M.D. (Vienna),F.R.C.P.(C).
- — J. P. Lemay, B.A.(Ott.), D.D.S.(Montr.), M.S.(Mich.)

Consultant
- — R. T. Lamb, B.Sc., D.D.S.(McG.), F.I.C.D., F.A.C.D.

Demonstrators in Dental Technology
- — I. Blumberger, C.D.T.
- — A.E. Pickard, C.D.T.
- — A. Wilson, C.D.T.
- — A. Woo, C.D.T.

First Year (590-121P)
Second Year (590-221P)
Third Year (590-321P)
Fourth Year (590-421P)

In the pre-clinical years the student is introduced to indirect restorative procedures by lecture series, literature reviews and laboratory projects.

In the clinical years, Fixed Prosthodontic procedures are performed within the overall treatment of clinical patients. Lectures, seminars, and references from periodic literature complement clinical experience to increase knowledge and understanding of Fixed Prosthodontics.(Texts — Johnston, Phillips and Dykema, *Modern Practice in Crown and Bridge Prosthodontics:* 3rd ed., Saunders; Skinner and Phillips, *The Science of Dental Materials:* 7th ed., Saunders; Wilson and Lang, *Practical Crown and Bridge Prosthodontics:* McGraw; Bassett, Ingraham and Koser, *An Atlas of Cast Gold Crowns:* West Orange County, California, *Kornfeld, Mouth Rehabilitation,* Vol. I and II: Mosby; Johnston, Mumford and Dykema, *Modern Practice in Dental Ceramics;* Saunders, Baum, *Advanced Restorative Dentistry:* Saunders; Shillingburg, Hobo and Fisher, *Properties for Cast Gold Restorations: Quintessence;* Craig and Peyton, *Restorative Dental Materials,* 5th. ed., Mosby; Tylman, Stanley D. *Theory and Practice of Crown and Bridge Prosthodontics;* 6th ed., Mosby;)

6.18 REMOVABLE PROSTHODONTIC

Assistant Professor
- — N. Dibai, D.D.S.(Tehran), M.S.(Ohio) (Acting Chairman)

Associate Professor
- — D. W. Henry, B.A.(Bishop's), D.D.S.(McG.), F.I.C.D.

Assistant Professors
- — J. F. Giacomelli, B.Sc., D.D.S.(McG.)
- — P. C. Staples, D.D.S.(McG.), F.I.C.D.

Lecturers
- — W. Kowal, B.A., D.D.S.(McG.)
- — F. Vosburg, B.A., D.D.S.(McG.)

Demonstrators
- — D.S. Ahn, D.D.S.(Soeul), D.D.S., Dip. Pros.(Rest. Dent.)(McG.)
- — J. D. Badger, D.D.S.(McG.)
- — L. C. Barnes, D.D.S.(McG.)

— R. G. Fletcher, B.A., B.Sc.(Sir G. Wms.), D.D.S.(McG.)
— S. Homayun, D.M.D. (Istanbul), D.D.S. (McG.)
— G. Konanec, D.D.S.(McG.)
— H. Konieczna, D.D.S. Ph.D. (Poland), D.D.S.(McG.)
— N. Miller, B.Sc., D.D.S.(McG.)
— G. Poznak, B.Sc.(Sir G. Wms.), D.D.S. (McG.)

Consultant

— J.T. Elo, B.A.(Sir G. Wms.), D.D.S.(McG.)

Second Year (590-220P)
Third Year (590-320P)
Fourth Year (590-420P)

In the pre-clinical year (2nd year) the students receive the basic theoretical and laboratory instruction related to complete and removable partial dentures.

In the clinical years (3rd and 4th years) the students are introduced to the clinical and theoretical aspects of complete and removable partial dentures which involve the examination, diagnosis, treatment planning, construction and maintenance of the soft tissues and the abutment teeth. (Texts — Boucher, Hickey and Zarb, *Prosthodontic Treatment for Edentulous Patients,* Mosby; Sharry, *Complete Denture Prosthodontics;* McGraw-Hill; Hartwell, Jr., *Syllabus of Complete Dentures,* Lea and Febiger; Nagle, Sears and Silverman, *Dental Prosthetics:* Mosby; Boucher, *Current Clinical Dental Terminology;* Mosby; McCracken's *Removable Partial Prosthodontics:* Mosby; Miller, *Removable Partial Prosthodontics:* Williams & Wilkins; Dykema, Cunningham and Johnston, *Modern Practice in Removable Partial Prosthodontics:* Saunders; Applegate, *Partial Denture Construction:* Mosby.)

DIVISION OF SURGERY AND ORAL MEDICINE

6.19 ANAESTHESIOLOGY, LOCAL AND GENERAL

Offered under the direction of the Department of Oral Surgery.

Professor

— K. C. Bentley, D.D.S., M.D.,C.M.(McG.), Cert. Oral Surg. (N.Y.U.-Bellevue), F.I.C.D., F.A.C.D. (Chairman)

Assistant Professor

— D. S. Shapiro, B.A., D.D.S.(McG.), M.S. (Iowa)

Guest Lecturers

— M. Dunkley, M.B., B.Ch.(Wales), F.R.C.P.(C), C.S.P.Q.(Anaesth.), F.A.C.A., D.A.B.A.
— T. McCaughey, M.B., B.Ch.(Ireland), F.R.C.P.(C), C.S.P.Q.(Anaesth.)

LOCAL

Second and Third Years (590-324P)

Anaesthetic drugs and solutions, the evaluation of new drugs and techniques, with a review of related anatomy are discussed. Demonstrations and clinical experience are provided.

GENERAL

Third Year

General principles and the physiology of anaesthesia with emphasis on factors of safety and the suitability of the agent used are discussed. Co-operation with the anaesthetist under hospital or office conditions and emergency resuscitative measures are stressed. (Texts — Niven and Bourgoyne, *Conduction, Infiltration and General Anaesthesia in Dentistry;* Archer, *Dental Anaesthesia;* Monheim, *Local Anaesthesia and Pain Control in Dental Practice;* Howe, Whitehead, *Local Anaesthesia in Dentistry)*

6.20 ANATOMY

Professors

— Y. Clermont, B.Sc.(Montr.), Ph.D.(McG.) (Chairman)
— C. P. Leblond, M.D. (Paris), Ph.D. (Montr.), D.Sc. (Sorbonne)
— D. G. Osmond, B.Sc., M.B.Ch.B.(Brist.)

Associate Professor

— N. J. Nadler, M.D.C.M., Ph.D. (McG.)
— H. Warshawsky, B.Sc. (Sir G. Wms.), M.Sc., Ph.D.(McG.)

Assistant Professors

— J. R. Brawer, B.S.(Tufts), Ph.D. (Harv.)
— E. Daniels, B.Sc.(S.Africa), M.Sc., Ph.D.(Man.)
— M. F. Lalli, M.A. (Bowling Green), Ph.D.(McG.)
— H. J. Monié, B.Sc. (St.Edward's), M.Sc.(Ore. State),Ph.D. (Wash.)
— C. E. Smith, D.D.S.,Ph.D. (McG.)
— M. Weinstock, D.D.S.(Tor.), Ph.D.(McG.)

Lecturer

— S. C. Miller, B.Sc. (Sir G. Wms.), M.Sc.,Ph.D.(McG.)

GROSS ANATOMY

First Year (3 terms) (504-111P)

The structure of the human body is studied by:
1) lectures and laboratory prosections of the musculo-skeletal and neuro-vascular systems in the upper limb and the visceral systems (circulatory, respiratory, digestive and reproductive systems) in the trunk;
2) a detailed dissection of the head and neck, emphasizing regional anatomy of special dental interest. (Texts — W. H. Hollinshead, *Textbook of*

Anatomy, 3rd ed., Harper and Row, 1974; E.K. Sauerland, *Grant's Dissector,* 7th ed., Williams and Wilkins, 1973; J.C.B. Grant, *An Atlas of Anatomy,* 6th ed.: Williams and Wilkins, 1972; S.M. Friedman, *Visual Anatomy,* Vol. 1, Head and Neck, 1st. ed.: Harper and Row, 1970)

HISTOLOGY

First Year (504-112P)

A study by means of microscopes (light and electron microscopes) of the cells and tissues that compose the various parts or organs of the human body. (Texts — A.W. Ham, *Histology,* 7th ed.: Lippincott, 1974; W. Bloom and D.W. Fawcett, *A Textbook of Histology,* 10th ed.: Saunders, 1975).

ORAL HISTOLOGY AND EMBRYOLOGY

First Year (504-117P)

A microscopic study of the development of the teeth and their supporting structures, and of the adult oral tissues through their life cycle. (Text — D.V. Provenza, *Fundamentals of Oral Histology and Embryology;* Lippincott, 1972; E.J. Reith and M.H. Ross, *Atlas of Descriptive Histology,* 2nd ed., Harper and Row)

6.21 BIOCHEMISTRY

Professors
- — A. F. Graham, B.A.Sc., M.A.Sc.(Tor.), Ph.D.(Edin.) (Chairman)
- — E. A. Hosein, B.Sc., M.Sc., Ph.D.(McG.) (Course Coordinator)

First Year (507-113P)

An outline of the general subject of biochemistry with a more special knowledge of such aspects which relate particularly to the science and practice of dentistry. Two to four lectures and one laboratory per week. (Texts — Joseph C. Muhler, *Textbook of Biochemistry for Students of Dentistry:* Mosby; E.P. Lazzari, *Dental Chemistry;* Lea and Febiger.)

6.22 DIAGNOSIS, ORAL

Associate Professor
- — T. P. McCrory, B.A., B.Sc.(Sir G. Wms.), D.D.S.(McG.), M.S.(Georgetown) (Chairman)

Professors
- — A. G. Racey, D.D.S.(McG.), Cert. Oral. Path.(Harv.), F.A.C.D., F.I.C.D.

Assistant Professor
- — R. P. Langlais, B.A.(Loyola), D.D.S.(McG.), M.S.D.(Indiana)

Lecturers
- — Z. B. Nyeste, B.Sc., D.D.S.(McG.)
- — A. G. Pullinger, B.D.S.(Lond.), D.D.S.(McG.)
- — A. F. Sonin, B.Sc., D.D.S.(McG.)

Demonstrators
- — A. Closner, B.Sc., D.D.S.(McG.)
- — R. F. Scholes, B.D.Sc.(Queensland)

Guest Lecturer
- — R. B. J. Dorion, B.Sc., D.D.S.(McG.)

Third Year (590-328P)

The student is taught the principles as well as the procedures involved in conducting a patient interview, performing a clinical examination and formulating a diagnosis. With this knowledge, and that gained previously about the mechanisms of disease, the student is then able to devise a rational treatment plan for the patient. Individual clinical instruction augments the lectures.

The course also provides an introduction to Forensic Dentistry which is the science that interprets dental and para-dental knowledge for the solution of medico-legal problems. This includes malpractice and negligence lawsuits, evaluation of traumatic injuries, insurance and/or compensation claims, as well as identification. (Text — Kerr, Ash, Millard, *Oral Diagnosis,* Mosby; Bhaskar, *Synopsis of Oral Pathology,* Mosby; Mitchell, Standish and Fast, *Oral Diagnosis/Oral Medicine,* Lea and Febiger.)

6.23 MEDICINE

Lecturer
- — Lorne Cassidy, B.A.(Loyola), M.D.(Ott.) (Course Director)

First Year (526-113P)

This course comprises a series of introductory lectures to the course in Medicine which will be given subsequently in the clinical years.

Associate Professors
- — J. L. McCallum, B.A., M.D., C.M.(McG.), F.R.C.P.(C), F.A.C.S. (Chairman)

Assistant Professors
- — J. L. Hutchison, B.Sc., M.D., C.M.(McG.), F.R.C.P.(C), F.A.C.P.
- — G. Joron, B.A.(Loyola), M.D., C.M.(McG.)

Lecturers
- — K. Cantor, B.Sc., M.D., C.M.(McG.), F.R.C.P.(C)
- — R. LaFleur M.D.(Ott.)
- — O. Schlapner, M.D.(Queen's)

Third Year (526-313P)

A review of the principles of medicine with particular attention to the relationship of good prenatal care and proper nutrition during infancy and childhood to dentition and the subsequent health of teeth and gums; oral manifestations of systemic disease and the importance of oral health in the successful treatment of certain medical conditions; medical complications of dental surgery and their prophylaxis.

6.24 MICROBIOLOGY AND IMMUNOLOGY

Professors
- S. I. Vas, M.D., Ph.D.(Bud.) (Chairman)
- J. de Vries, B.A.(Dal.), M.D., C.M.(McG.) (Course Coordinator)

Second Year (528-213P)

Elementary dental bacteriology and immunology. (42 hours of lectures.) (Text — *Oral Microbiology;* W.A. Nolte, 2nd ed.: Mosby)

6.25 PATHOLOGY, GENERAL

Professors
- R. H. More, M.D.(Tor.), F.R.S.C. (Chairman)

Associate Professor
- T. P. McCrory, B.A., B.Sc.(Sir G. Wms.), D.D.S.(McG.), M.S.(Georgetown)

Assistant Professor
- G. Berry, B.A., B.Sc.(St. F.X.), M.D.(Dal.)

Second Year (546-216P)

A course in general pathology principles and processes with an immediate correlation to and integration of oral pathology.

6.26 PATHOLOGY, ORAL

Associate Professor
- T. P. McCrory, B.A., B.Sc.(Sir G. Wms.), D.D.S.(McG.), M.S.(Georgetown) (Chairman)

Professor
- A. G. Racey, D.D.S.(McG.), Cert. Oral. Path.(Harv.), F.A.C.D., F.I.C.D.

Assistant Professor
- R. P. Langlais, B.A.(Loyola), D.D.S.(McG.), M.S.D.(Indiana)

Second Year (590-217P)

This course is closely integrated with the course in Pathology. It deals with the nature of disease affecting the oral regions, through study of their causes, processes and effects, together with the associated alterations of oral structure and function. Clinical sessions complement the lectures. (Texts — Shafer, Hine and Levy, *Oral Pathology; Saunders; Color Atlas of Oral Pathology:* Lippincott; J. D. Spouge, *Oral Pathology:* Mosby.)

6.27 PHARMACOLOGY AND THERAPEUTICS

Professors
- J. R. Ruedy, M.D., C.M.(Queen's), F.R.C.P.(C). (Chairman)
- J. Lowenthal, B.Sc., M.Sc., Ph.D.(Montr.)
- M. Nickerson, A.B.(Linfield), Sc.M.(Brown), Ph.D.(Johns H.), M.D.(Utah)

Associate Professors
- B. G. Benfey, M.D.(Hamburg)
- B. Collier, B.Sc., Ph.D.(Leeds)
- N. R. Eade, B.Sc., M.Sc.(Sask.), D.Phil.(Oxon.)
- A. Tenenhouse, B.Sc., Ph.D., M.D., C.M.(McG.)

Assistant Professor
- B. Zablocka-Esplin, M.D.(Warsaw)

Second Year (549-219P)

A course of 41 lectures, given twice weekly, concerned with the basic principles of the actions of drugs and applied therapeutics where indicated. (Texts — Andres Goth, *Medical Pharmacology;* Goodman and Gilman, *The Pharmacological Basis of Therapeutics,* 4th ed.)

6.28 PHARMACOLOGY AND THERAPEUTICS, DENTAL

Professor
- J. A. de Vries, B.A.(Dal.), M.D., C.M.(McG.)

Associate Professor
- J. W. Stamm, D.D.S.(Alta.), D.D.P.H., M.Sc.D.(Tor.)

Guest Lecturer
- J. L. Hutchison, B.Sc., M.D., C.M.(McG.), F.R.C.P.(C), F.A.C.P.

Third Year (590-319P)

A study of those drugs that have special application to dental practice. Lectures and seminars reviewing various pathological conditions and possible therapy. (Texts — A.D.A. *Accepted Dental Remedies 1968;* Sutherland, *A Synopsis of Pharmacology; Compendium of Pharmaceuticals and Specialties,* 9th ed. 1974.)

6.29 PHYSIOLOGY

Professor
- J. Milic-Emili, M.D.(Milan) (Chairman)

Assistant Professor
- P. B. Noble, B.Sc.(Edin.), Ph.D.(W. Ont.) (Course Coordinator)

First Year (552-116P)

Selected topics in areas of human physiology of particular significance for dental practice. These will include the more detailed study of aspects of blood, the cardiovascular, respiratory, digestive, endocrinological and central nervous systems (3 hours of lectures and/or laboratory periods per week). Textbook — No text specified. Recommended reading lists will be provided for each of the subjects studied.

It is recommended that students take a general course in physiology (e.g. Physiology 211D at McGill, or a similar "college course" in Physiology) during their pre-dental studies.

6.30 RADIOLOGY

Associate Professor
— T. P. McCrory, B.A., B.Sc.(Sir G. Wms.), D.D.S.(McG.), M.S.(Georgetown) (Chairman)
Professors
— A. G. Racey, D.D.S.(McG.), Cert. Oral. Path.(Harv.), F.A.C.D., F.I.C.D.
— K. C. Bentley, D.D.S., M.D., C.M.(McG.), F.I.C.D., F.A.C.D.
Assistant Professor
— R. P. Langlais, B.A.(Loyola), D.D.S.(McG.), M.S.D.(Indiana)
Lecturers
— Z. B. Nyeste, B.Sc., D.D.S.(McG.)
— A. F. Sonin, B.Sc., D.D.S.(McG.)
Demonstrators
— A. Closner, B.Sc., D.D.S.(McG.)
— R. F. Scholes, B.D.Sc.(Queensland)

Second Year (590-222P)

In the second semester this course instructs the student in the fundamentals of radiography, and the basics in taking and processing radiographs. Clinical experience supplements the lectures.

Third Year (590-322P)

Advanced instruction and additional experience is provided in technic and interpretation. (Texts — Stafne, *Oral Roentgenographic Diagnosis,* Saunders; Wuehrmann and Manson-Hing, *Dental Radiology,* Mosby.

6.31 SURGERY, ORAL

Professor
— K. C. Bentley, D.D.S., M.D., C.M.(McG.), Cert. Oral Surg.(N.Y.U.-Bellevue), F.I.C.D., F.A.C.D.(Chairman)
Associate Professors
— J.J. McCarthy, B.Sc.(St. F.X.), D.D.S.(McG.), Dip. Oral Surgery(Penn.), F.R.C.D.(C), F.I.C.D.
— E. P. Millar, D.D.S.(McG.), Dip. Oral Surgery (Penn.), F.R.C.D.(C), F.I.C.D.
Assistant Professors
— G. L. Freedman, D.D.S.(McG.), M.S.D.(Wis.), F.R.C.D.(C)
— E. Slapcoff, B.Sc., D.D.S.(McG.), F.R.C.D.(C)
— D.S. Shapiro, B.A., D.D.S.(McG.), M.S.(Iowa)
— R. M. Wiener, B.S.(Chic.), D.D.S.(McG.), M.S.(Chic.)
Demonstrators
— R. F. Scholes, B.D.Sc. (Queensland)
— J. Sherman, D.D.S.(McG.)

Third Year (590-323P)
Fourth Year (590-423P)

These courses are designed to help the student develop a foundation of professional knowledge coupled with surgical skills to enable him to diagnose and manage competently the oral surgery problems related to the practice of general dentistry. The student is also expected to acquire an academic appreciation of the advanced field of oral surgery, which involves the diagnosis, treatment, prescribing for and operating upon any disease, injury, malformation or deficiency of the human jaws or associated structures.

The course in Anaesthesiology is offered under the direction of the Department of Oral Surgery. (Texts and Reference Books — Thoma, *Oral Surgery;* Archer, *Oral Surgery;* Nevin and Bourgoyne, *Conduction, Infiltration and General Anaesthesia in Dentistry;* Rowe and Killey, *Fractures of the Facial Skeleton;* Kazanjian and Converse, *The Surgical Treatment of Facial Injuries;* Schwartz, *Disorders of the Temporomandibular Joint;* H.G. Clark, *Practical Oral Surgery;* G.L. Howe, *The Extraction of Teeth;* G.O. Kruger, *Text-book of Oral Surgery;* Killey and Kay, *Benign Cystic Lesions of the Jaws)*

7 COURSES OFFERED IN THE FACULTY OF GRADUATE STUDIES AND RESEARCH

All students who are registered in Graduate Programs in the Faculty of Dentistry, McGill University, and who are not already registered with the Order, **must** register with the Order of Dentists of Quebec. This registration fee is $25.00. Further information may be obtained from the Registrar of the Order of Dentists of Quebec, 801 Sherbrooke Street East, Montreal, Quebec H2L 1K4.

7.1 MASTER OF SCIENCE IN PROSTHODONTICS (RESTORATIVE DENTISTRY)

Professors
— H. Rosen, B.Sc., D.D.S.(McG.), F.I.C.D., F.A.C.D.(Director)
— E. R. Ambrose, D.D.S.(McG.), F.I.C.D., F.A.C.D.
Associate Professors
— R. F. Harvey, D.D.S.(McG.), F.R.C.D.(C), F.A.C.D., F.I.C.D.
— D. W. Henry, B.A.(Bishop's), D.D.S.(McG.), F.I.C.D.
— R. G. Jones, B.A., D.D.S.(McG.), M.S.D.(Indiana), F.R.C.D.(C)
— D. Kepron, B.Sc.(Man.), D.D.S.(McG.), M.Sc.(Mich.), F.R.C.D.(C)
— B. Sedlezky, B.Sc.(McG.), D.D.S.(McG.)
— J. D. Townsend, B.Sc.(U.B.C.), D.D.S.(McG.), M.S.D.(Wash.)
Assistant Professor
— N. Dibai, D.D.S.(Tehran), M.S.(Ohio)

Lecturer

J. Valiquette, D.D.S., (Montr.), F.R.C.D.(C)

Members of the Department of Endodontics, Operative Dentistry, Oral Surgery, Orthodontics, Pathology and Diagnosis, Periodontics, Pharmacology and Therapeutics, Fixed and Removable Prosthodontics.

Admission is restricted to candidates who hold a D.D.S. or equivalent degree with good standing from an approved institution. Preference will be given to those applicants who have been in general practice or rotating internships for at least one year. Disciplines involved are: Advanced Operative Dentistry, Fixed Prosthodontics, Maxillofacial Prosthesis, Removable Prosthodontics as well as supportive and allied clinical sciences. The course will consist of didactic lectures, case presentation seminars, treatment of clinical cases under supervision, reports on clinical cases, teaching assistantship, selected office visits. Candidates will be required to attend pertinent basic science lectures. A research project must begin by the end of the first year and continue through the second year resulting in a Master's thesis upon completion of the program.

Duration: At least twenty-six months beginning July 1.

One candidate is accepted each year.

Tuition (Approximate): $570.00 for the first year
$285.00 for the second year

Equipment Rental: $150.00

Information for financial support may be obtained by writing to the Director of the course.

7.2 MASTER OF SCIENCE (ORAL SURGERY)

Professors

— K. C. Bentley, D.D.S., M.D., C.M.(McG.), Cert. Oral Surg.(N.Y.U.-Bellevue), F.I.C.D., F.A.C.D.(Director)

Associate Professors

— J. J. McCarthy, B.Sc.(St. F.X.), D.D.S.(McG.), F.R.C.D.(C), F.I.C.D.

— E. P. Millar, D.D.S.(McG.), F.R.C.D.(C), F.I.C.D.

Assistant Professors

— G. L. Freedman, D.D.S.(McG.), M.S.D.(Wash.), F.R.C.D.(C)

— D. S. Shapiro, B.A., D.D.S.(McG.), M.S.(Iowa)

A residency training program in Oral Surgery has been developed to provide students with a comprehensive background for the practice of Oral Surgery as a specialty.

During the three years of the program the candidate will serve as a first year resident, second year resident and third year resident. During this time he will be given increasing responsibility for the care of in-patients and out-patients, as well as being required to fulfill certain basic science courses and other assignments. Candidates for this program must possess a D.D.S. or D.M.D. degree or its equivalent, and be acceptable to the Order of Dentists of Quebec as a training candidate in a hospital. A research project must be commenced in the second year of the program and continued throughout the third year, followed by a Master's thesis.

Duration: Three academic years commencing July 1.

Further information may be obtained by writing to Dr. K. C. Bentley, Dental Surgeon-in-Chief, Montreal General Hospital, Montreal, Que. H3G 1A4.

The program is open to one candidate per year.

Tuition (approximate):
$570.00 for each of the first two years
$285.00 for each additional year

Information for financial support for these courses may be obtained by writing to the Director of the course.

8 CONTINUING DENTAL EDUCATION

Associate Professor

— J. W. Stamm, D.D.S.(Alta.), D.D.P.H., M.Sc.D.(Tor.) (Coordinator)

CREDIT COURSES

At periodic intervals, the Faculty, along with other established bodies in the health field, sponsors courses in Continuing Dental Education which are recognized for Continuing Dental Education credits by dental licensing bodies.

Generally the Faculty offers a series of limited enrolment courses in various clinical and basic sciences related to dentistry. In most cases, the courses are designed to meet the needs of the general practitioner, to keep him abreast of current concepts and practices and to make him aware of recent advances in dental science.

Enquiries should be directed to:

Co-ordinator of Continuing Education
Division of Community Dentistry
Faculty of Dentistry
McGill University
P.O. Box 6070, Station A
Montreal, Que. H3C 3G1

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NOVEMBER						
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DECEMBER						
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Faculty of

EDUCATION

1976/77

McGill University
Montreal

The University reserves the right to make changes without prior notice to the information contained in this publication, including the alteration of various fees schedules and the revision or cancellation of particular courses.

Students intending to seek membership in a professional corporation in Quebec are reminded that after July 1, 1976 they will be required to show that they possess a working knowledge of the French language, in conformity with the requirements of the Professional Code (Bill 250) and the Official Language Act (Bill 22).

Faculty of
EDUCATION

1976 — 1977

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CALENDAR FOR SESSION 1976-77

1976

May 10, Monday to June 18, Friday	Summer Session — Part I
July 5, Monday to August 13, Friday	Summer Session — Part II
August 10, Tuesday to August 19, Thursday	Supplemental Examinations
Sept 2, Thursday	Course Counselling, returning U3 students
Sept 3, Friday	Course Counselling, returning U2 students
Sept 6, Monday	Labour Day
Sept 8, Wednesday	Registration in Diploma Programs in Education A-K 1-3 p.m. L-Z 3-5 p.m. Registration in Graduate Programs begins Course Counselling, new B. Ed students (A-K)
Sept 9, Thursday	Course Counselling, new B. Ed students (L-Z)
Sept 10, Friday	B. Ed Registration: — Returning U2-U3 A-K 8.30 — 10.30 a.m. L-Z 10.30 — 12.30 p.m. New students A-K 1-3 p.m. L-Z 3-5 p.m.
Sept 13, Monday	Lectures begin B. Ed, Diploma Programs & Graduate Programs.
Sept 17, Friday	Last day to complete Graduate registration
Oct 1, Friday	Last day for course changes B. Ed & Diploma Programs
Oct 11, Monday	Thanksgiving Day
Oct 15, Friday	Deadline for withdrawing from "A" courses
Oct 29, Friday	Last day for course changes in Graduate Programs
Nov 26, Friday	Deadline for withdrawing from "D" courses
Dec 10, Friday	B.Ed. and Graduate Programs end.
Dec 13, Monday	Class tests in B.Ed. 'D' courses begin.
Dec 16, Thursday	Lectures end in Diploma programs
Dec 17, Friday	Class tests in Diploma program in 'D' courses Last day class tests in B.Ed. 'D' courses.

1977

Jan 4, Tuesday to Jan 14, Friday	Examinations in "A" courses *B. Ed program*
Jan 10, Monday	Diploma programs resume
Jan 14, Friday	January Registration for new B.Ed students
Jan 17, Monday	Lectures resume in B.Ed & Graduate programs
Jan 28, Friday	Last day for "B" course changes
Feb 11, Friday and Feb 12, Saturday	Mid-term holiday
Feb 18, Friday	Deadline for withdrawing from "B" courses
April 8, Friday to April 11, Monday (inclusive)	Easter — no lectures
April 15, Friday	Lectures end — B.Ed & Graduate programs
April 18, Monday to May 6, Friday	Final examinations in "B" & "D" courses
April 22, Friday	Lectures end in Diploma programs
April 25, Monday	All reports on theses for Spring Convocation must be returned to Thesis Office
May 5, Thursday	Non-Thesis forms for Spring Convocation must be returned to Thesis Office
May 9, Monday	Last day for holding Doctoral Orals for Spring Convocation
May 23, Monday	Victoria Day
June 7-8, Tuesday and Wednesday	Convocations

1 STAFF

Administrative Officers

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2 PROGRAMS OFFERED

The Faculty of Education offers a wide variety of programs leading to professional careers in the fields of elementary and secondary education. In addition, the Faculty offers a number of part-time or in-service programs for certified teachers who wish to upgrade their qualifications or add areas of specialization. Also, through the Faculty of Graduate Studies and Research, the Faculty of Education offers graduate degree programs designed primarily for educators who wish to study further in their area of competence or obtain professional and academic qualifications in advanced fields of educational theory and practice.

All of these programs meet provincial standards in regard to teacher classification (Regulation # 5) and, when applicable, meet current certification requirements of the Ministry of Education, Province of Quebec (Regulation # 4). Successful candidates eligible to teach in Quebec are recommended to the Ministry of Education by the University for provincial certification. For more detail on eligibility and procedures see Section 6, page 62.

Fluency in one of the official languages of Canada (English or French) is a requirement for all candidates seeking provincial teacher certification; candidates who cannot demonstrate this fluency cannot be recommended for certification and will be required to withdraw from the Faculty. In addition, all applicants are reminded that the normal language of instruction at McGill is English. Students may write term papers and final examinations in French, but a good functional knowledge of English is necessary before commencing a program and is essential for success. Applicants whose mother tongue is a language other than English or French are strongly advised to have their oral and written ability evaluated before submitting an application (see Section 5, page 58). Candidates who intend to seek employment in schools in the Montreal area are advised that French-Immersion programs have recently grown in popularity in some School Boards and that ability to teach fluently in both English and French is a decided advantage.

Admission to most programs offered by the Faculty is selective and better than average grades are normally required. A high academic average does not, however, necessarily ensure admission; nor does a low academic average automatically disqualify an applicant from admission. The Faculty recognizes that such factors are only meaningful when considered whithin the broader perspective provided by all of the application materials. Letters of reference can provide important qualitative evidence concerning an applicant's background and potential; they are reviewed most carefully by the Admission Committee. In addition, the Faculty recognizes that experience gained outside of the normal academic milieu may have contributed valuable motivational and personal dimensions not necessarily known to others. Any applicant who believes that these experiences have been of value in this way is invited to append a personal statement to the Application Form.

2.1 BACHELOR OF EDUCATION

(90 credit, full-time, university-level programs)

The B.Ed degree programs are designed primarily for graduates of Quebec's Junior Colleges (CEGEP's) who wish to qualify as teachers at the elementary and/or secondary school levels. The program is normally completed during three years of full-time study and combines academic courses in the area of concentration, professional courses related to the teaching area and appropriate Field Experiences within the elementary or secondary schools of the Province. There are four programs at the Elementary level:

Pre-School
Early Childhood
Later Childhood
Elementary French

and there are programs designed to prepare High School teachers in one or two academic subjects taught at the secondary level. In addition, there are programs designed to prepare teachers of Physical Education, Art and Religious Studies at both elementary and secondary levels.

The admission requirement for Quebec applicants is a Diploma of Collegial Studies as awarded by a CEGEP, or its equivalent. There are no specified pre-requisite courses required for admission but candidates are advised to include French, Introductory Psychology and Introductory Sociology and other courses relevant to their proposed teaching areas. For example, a prospective teacher of mathematics would be advised to have included a concentration in Mathematics; courses in Biology and Chemistry are strongly advised for applicants in Physical Education or Home Economics; courses in Art and Music would be appropriate for Pre-School or Early Childhood applicants. Generally speaking, CEGEP candidates are advised to concentrate on those subjects which are taught in the elementary and secondary schools e.g. English, French, Mathematics, Science, History, Geography, Social Studies, Languages, Art, Music, Religion.

Ontario Grade XIII candidates may apply if they have an average of 70% in five appropriate Grade XIII subjects. Candidates from Commonwealth countries with three G.C.E. "A" level subjects are also eligible to apply.

Other overseas students are encouraged to apply if they have certificates equivalent to those outlined above. Such applicants should refer to the **General Announcement** and are advised to write directly to the Admissions Office for an evaluation of their qualifications.

Candidates with Grade XII qualifications, with good grades in five appropriate G.C.E. "0" levels plus one full year of formal schooling, and mature applicants are eligible to apply for a program requiring the completion of 120 credits (normally four years of study).

Residents of Canada who are 23 years of age or older and who lack the academic background normally required for admission may apply for entrance as mature students into a 120 credit program normally requiring four years of study.

Apply before 1st March to:

Admissions Office
McGill University
P.O. Box 6070, Station A
Montreal, Quebec H3C 3G1; Canada.

Note 1. Quebec applicants applying for B.Ed programs in Elementary Education, Home Economics, Physical Education, Physics, Chemistry, French and Modern Languages are required to arrange interviews with the Department concerned prior to admission.

Note 2. Applicants who possess qualifications at university-level beyond the minimum required for admission may apply for transfer credit and advanced standing. Such requests must be clearly indicated on the Application Form. Retroactive credit after admission will not normally be considered.

Note 3. In certain circumstances it is possible for B.Ed applicants to be admitted in January or to the Summer Session. Interested applicants should contact the Admissions Office in the first instance.

Note 4. Inter-Faculty transfer students should apply before 1st May to the Associate Dean's Office, Faculty of Education, 3700 McTavish Street Montreal, Quebec H3A 1Y2.

Note 5. Applicants for the B.Ed (Home Economics) should apply before 1st March to:

School of Food Science
Macdonald College, Quebec.
Canada, H0A 1C0.

2.2 DIPLOMA IN EDUCATION

(One year, full-time program for University graduates)

This Diploma program requires one full-time year of professional studies. Recognized by the Government of Quebec, it is designed to prepare university graduates for a teaching career in elementary or secondary education. The Diploma is recognized in all the Provinces of Canada and in most countries in the world. Eligible candidates are recommended to the Quebec Ministry of Education by the University for provincial teacher certification.

The three programs at the Elementary level (Early Childhood, Later Childhood and Elementary French) are somewhat unique in that each candidate is required to enroll in an internship which takes place within an elementary school. This internship takes up approximately 50% of the program and requires full-time attendance at an elementary school for two or three days each week throughout the year. In this way, the program provides an opportunity to integrate theory and practice.

Potential high school teachers are provided with programs preparing them to teach one or two subjects at the secondary level. With the one exception of Physical Education the Faculty offers the whole range of both academic and vocational courses taught in Quebec High Schools. All programs provide for students to spend up to eight weeks full-time in High School settings and in this way each student is given the opportunity to integrate theory with practice in a realistic setting. The Diploma programs at the secondary level have also provided valuable training and experience to those graduates with Master's or Doctoral degrees seeking employment in CEGEP, Community or Junior Colleges.

The Diploma programs, at either Elementary or Secondary level, provide one of the normal prerequisites for admission to Graduate level specializations in Educational Administration, Guidance and Counselling, Special Education, Teaching of Reading, Educational Psychology etc.

The admission requirements are a university degree, or its equivalent, prior to admission. Candidates must normally have at least a 2nd class average in their degree and either a major (six full university-level courses) in one subject taught in the elementary or secondary schools of the Province of Quebec, or two minors (three full university-level courses) in two such subjects.

In addition to these minimum requirements certain areas have further requirements as indicated below:—

Elementary (Early and Later Childhood)

Candidates whose degrees do not contain the exact concentration of courses as outlined above may be considered for admission if they have a high standard of scholarship, if their degrees include a range of courses in subjects normally taught in elementary schools, and if their letters of reference and personal statement show evidence of relevant experience or high potential as elementary school teachers.

Elementary French

In addition to the requirements for all Elementary candidates as outlined above, all applicants will be assessed in their oral and written competence in the French language.

Secondary Art

Candidates must possess a degree of Bachelor of Fine Arts, an Art School equivalent plus a university degree, or a Degree with Art Major in which studio work formed the major part of the program. Candidates are required to present a portfolio of their work and to arrange for an interview with a member of the Department usually during the month of April prior to admission.

Secondary English

Candidates should normally have taken six full university-level courses from those offered in Departments of English, or three courses in English and three courses in another teaching subject; courses in linguistics, drama, and film are also recognized. For candidates who have graduated from a four-year B.A. degree program, a required first-year course in English may not be included in order to achieve the requisite number of courses. Candidates with special experience in English outside academic course work should apply to the Department of Education in English of the Faculty of Education if they are otherwise short of requirements.

Candidates should note that "English" and "English as a Second Language" are two different options. Those interested in the latter option should refer to the section below headed "Secondary Second Languages."

Secondary Social Studies

a) Geography: The normal requirement of six full university level courses in geography, or three courses in geography and three courses in another teaching subject is applicable. Candidates should have courses in both physical and human geography and, preferably, one course in Cartography.

b) History; The normal requirement applies as for geography above, but candidates should have at least one course in Canadian history and one course in European history.

c) Economics: Candidates must have the normal requirement of six full university level courses in Economics.

d) Social Studies: Candidates may elect Social Studies as one of their teaching options but, in addition, they must have the qualifications to be admitted into a second teaching area. Their degree must show an acceptable sequence of courses in at least one social science discipline, e.g., political science, economics, anthropology, or sociology.

Candidates who do not have the required number of courses to apply for the above programs may be counselled to undertake qualifying summer courses prior to admission.

Secondary Mathematics

Candidates seeking to teach only mathematics at secondary level must possess the normal requirement of six full courses in university level mathematics provided that there has been no undue emphasis in one particular area, e.g. four courses in statistics.

Secondary Science

(Biology, Chemistry, Physics, General Science)

Candidates for the Secondary Biology, Chemistry and Physics options must possess appropriate prerequisites at the college level (or equivalent) as well as a minimum of **three** full university level courses in the discipline concerned. Candidates for the General Science option must have some college level (or equivalent) background in science as well as **three** full university level courses in science. Preference will be given to candidates who have taken courses over and above these minimum requirements. All candidates must have the qualifications to be admitted to two subjects: either two science subjects or one science subject and one other secondary level subject.

Secondary Religious Studies

(Catholic, Protestant, Jewish)

a) Catholic: available as either one subject in which case six full courses in Theology are required or as one of two subjects in which case three full courses in Theology are required.

b) Protestant: available only as one of two subjects. A minimum of three full university level courses in Religion are required.

c) Jewish Studies: available only as one subject but certification is for Religion at both Elementary and Secondary levels. Candidates must possess an appropriate university degree and appropriate background in Hebrew and/or Yiddish, Biblical literature, customs, etc.

Secondary Second Languages

(French, English, Italian, German, Spanish, Latin)

For candidates choosing a second language or Modern Languages as a single option, the requirement of a major in this teaching subject (i.e. six (6) full university courses) may include, besides a minimum of three (3) courses in literature and linguistics, other courses that are related to the culture concerned and to aspects of language communication and civilization in general. In addition, all candidates will be assessed on their oral and written competence in the language(s) they wish to teach. Assessment sessions will be held in the spring prior to admission. The options available are:-

a) French as a Second Language: candidates are reminded that in addition to oral and written competence in French they will also be required to take some courses given in the English language.

b) English as a Second Language: candidates should note that this is not the same option

as "Secondary English". Those who plan to teach English as a Second Language in French **écoles secondaires** are advised to have a good functional knowledge of French in order to work harmoniously in these schools.

c) Modern Languages (German, Italian, Spanish): candidates are reminded that in addition to oral and written competence in the language(s) they wish to teach they will also be required to possess a good functional knowledge of English.

d) Latin: candidates interested in this option should contact the Chairman of the Department of Education in Second Languages of the Faculty of Education before submitting an application.

Secondary Home Economics

Candidates must possess a university degree in Home Economics or an acceptable equivalent.

The candidate's transcript should contain appropriate courses in at least three of the areas of the secondary school curriculum in Home Economics and at least some courses in the remaining areas. The Quebec Secondary School Curriculum in Home Economics has the following areas — Foods and Nutrition, Family Living, Housing and Design, Consumer Education and Clothing and Textiles.

Secondary Technical-Vocational or Business Education

The candidate must possess a university degree, or its equivalent, in appropriate subjects. Each candidate's credentials will be individually evaluated to ensure that they meet the requirements with respect to academic background and work experience. This will be followed by an interview to further determine the candidate's suitability for admission to this program. All interested applicants should contact the Program Director, Technical-Vocational Education, Faculty of Education, 3700 McTavish Street, Montreal Quebec H3A 1Y2.

Music

Candidates must possess a Bachelor of Music in School Music or its equivalent. Certification is for Music at both Elementary and Secondary levels and thus students are required to undertake course work and student teaching at both elementary and secondary levels.

Physical Therapy

In conjunction with the School of Physical and Occupational Therapy, a one-year program leading to the McGill Diploma in Education is offered to qualified Physical Therapists who aspire to a teaching career in a recognized school of Physical Therapy. For further information write to The School of Physical and Occupational Therapy, 3654 Drummond Street, Montreal, Quebec, Canada H3G 1Y5.

Certificate in Education

(One year full-time program)

The Certificate in Education is a one year, full-time program designed to prepare teachers in the field of technical-vocational or business education at the secondary school level. Eligible graduates are recommended by the University for Quebec Teacher Certification. The program itself is similar in content to that described above as part of the McGill Diploma in Education.

For admission to this program it is necessary to have at least thirteen years of scolarité. This would normally mean a Quebec Grade XI High School Leaving Certificate, or its equivalent, plus two years of appropriate training in the area of specialization. Because candidates are drawn from a wide cross-section of the technologies and trades in industry and in business, their specialized training has usually been undertaken at a recognized professional training institution (University, CEGEP, Business College, Technical or Professional Institute, Trade School etc.) In addition, all candidates must have acceptable related work experience in their area of specialization.

Each candidate's credentials will be individually evaluated to ensure they meet the above requirements with respect to academic and technical scolarité. This will be followed by an interview to further determine a candidate's suitability for admission.

All interested applicants should contact the Program Director, Technical-Vocational Education, Faculty of Education, 3700 McTavish Street, Montreal, Quebec H3A 1Y2.

2.3 PROGRAMS FOR PART-TIME STUDENTS

During the summer months as well as in the evenings of the fall and winter terms the Faculty of Education offers a selected number of programs designed for teachers who are interested in pursuing further studies. All the programs listed below meet provincial standards in regard to the up-grading of teacher classification (Regulation # 5).

For calendars outlining courses offered during the various sessions and for information regarding registration procedures, fees, etc., contact:

Centre for Continuing Education
772 Sherbrooke Street West
Montreal, Quebec H3A 1G1
392-4757
or
McGill Summer Session
P.O. Box 6070, Station A
Montreal, Quebec H3C 3G1
392-6740

Unless otherwise directed, for admission to all the following part-time programs apply to:

Student Affairs Office
Faculty of Education
3700 McTavish Street
Montreal, Quebec H3A 1Y2
392-8899

Bachelor of Education for Certified Teachers (Elementary Education)

This 90 credit B.Ed. degree was designed for teachers who are already certified to teach in elementary schools and who wish to upgrade their qualifications and scolarité to degree status. A student must take a minimum of 60 credits at McGill in order to qualify for the degree. Thus, only 30 credits from other institutions may be considered as transfer credits. This program is available on a part-time basis in the summer, and in the evening during the fall and winter terms. It is available also on a full time basis.

The program combines academic courses in areas of concentration, academic and free electives, and professional courses related to educational theories and teaching strategies. Candidates may satisfy the professional requirements of the degree by following concurrently a 30 credit diploma program in Special Education, Reading, Educational Media, Kindergarten, or Second Language Teaching. These diploma programs are described below.

The admission requirements are:

1. Quebec teacher certification or its equivalent;
2. At least 13 years of schooling

Further information regarding the program may be obtained from the office of:

Associate Dean — Extension
Faculty of Education
3700 McTavish Street
Montreal, Quebec H3A 1Y2
392-8828

For admission to the program apply to the Student Affairs Office.

Admission is possible in September, January and July.

For program profile see page 27

Quebec Diploma In Special Education

The Diploma in Special Education is required by teachers wishing to work with children who have learning and/or behaviour problems and who have been classified as exceptional children for Ministry of Education purposes. However, courses leading to the diploma have been found useful also to "regular" class teachers interested in children with learning and/or behavioural problems or physical handicaps. At present the Quebec Ministry of Education requires that a "free flow" teacher have: a degree; a diploma in Special Education (if the "free flow" assignment is in fact restricted to instruction in reading, a teacher may substitute a diploma in reading); a clinical experience that may or may not be included in the Diploma work.

All eligible candidates may follow this diploma program concurrently as part of the B.Ed. for Certified Teachers.

The admission requirements are:

1. a teacher authorization (Permit, Diploma, P.T.A., etc). from the Quebec Ministry of Education;
2. a recommendation from a school principal or Special Education Director who has the most recent knowledge of the teacher's competence.

Priority is given to teachers who have already been appointed to a Special Education assignment.

Further information regarding this program may be obtained from:

Special Education Office
Faculty of Education
3700 McTavish Street
Montreal, Quebec H3A 1Y2 392-8809

For off-campus courses in Special Education, apply to the office responsible for coordinating continuing education at the Regional School Board Offices.

For admission to the program apply to the Student Affairs Office.

For program profile see page 27

Quebec Diploma in Reading Instruction

The Diploma in Reading Instruction is a 30 credit program which consists of a sequence of ten courses offered at the Faculty of Education and at off-campus locations during the summer, and during the fall and winter as evening classes. This diploma program is intended to train practicing teachers in more effective developmental and corrective teaching of reading.

This program must be completed within 5 years; that is, no course will be counted if it was completed more than 5 years before the completion of the last course which is to be counted toward the diploma.

All eligible candidates may follow this diploma program concurrently as part of the B.Ed. for Certified Teachers.

The admission requirements are:

1. a teaching certificate valid in Quebec;
2. evidence of successful teaching experience;
3. a recommendation from a school principal.

Further information regarding this program may be obtained from:

The Director, Reading Centre,
Faculty of Education
3700 McTavish Street
Montreal, Quebec H3A 1Y2 392-8888

For admission to the program apply to the Student Affairs Office.

For program profile see page 27

Quebec Educational Media Diploma

The Quebec Educational Media Diploma is a 30 credit program for Quebec certified teachers. It is designed to provide basic media skills both to those who wish to become media co-ordinators and managers of library-resource centres.

The courses are offered in the evening and in the summer by the Educational Media Centre of the Faculty of Education. Students enrolled in the program are given access to the television, film, photography and other audio-visual facilities of the Centre for the production and presentation of instructional materials.

All eligible candidates may follow this diploma program concurrently as part of the B.Ed. for Certified Teachers.

The admission requirement is a teaching authorization (Permit, Diploma, P.T.A. etc.,) from the Quebec Ministry of Education.

Further information regarding this program may be obtained from:

The Director, Educational Media Centre
Faculty of Education
3700 McTavish Street
Montreal, Quebec H3A 1Y2 392-8876

For admission to the program apply to the Student Affairs Office.

For program profile see page 28

Quebec Kindergarten Diploma

This Diploma program is designed for certified elementary school teachers who wish to become Kindergarten Specialists. This 30 credit program includes courses in Child Development, Art, Music, Creative Movement and Dramatics, Teaching Methods and Materials for children of the 5-8 age groups.

All eligible candidates may follow this program concurrently as part of the B.Ed. for Certified Teachers.

The admission requirements are:

1. Quebec teacher certification or its equivalent;
2. at least 13 years of schooling.

Further information regarding this program may be obtained from:

Program Director
Kindergarten Diploma
Faculty of Education
3700 McTavish Street
Montreal, Quebec H3A 1Y2 392-8851

For admission to the program apply to the Student Affairs Office.

For program profile see page 28

Certificate in Second Language Teaching

This 30 credit program is open to certified teachers who wish to specialize in the teaching of second languages.

General Objective: To enhance professional competence of certified teachers who are interested in teaching second languages and who are sufficiently bilingual to do so.

Specific Objectives: (a) To consolidate proficiency in the language to be taught as a second language; (b) to impart information, skills and techniques related to second language teaching and testing; (c) to acquaint teachers with modern theories of psycholinguistics and socio-linguistics for a better understanding of their application to procedures and materials used in language learning.

Applicants will be assessed on their oral and written competence in the language they wish to teach as a second language. Normally candidates must be recommended by the school boards for which they work.

All eligible candidates may follow this program concurrently as part of the B.Ed. for Certified Teachers.

Before submitting an application candidates must contact:

The Chairman
Department of Education in Second Languages
Faculty of Education
3700 McTavish Street
Montreal, Quebec H3A 1Y2
392-8863
392-8861

For program profile see page 28

Certificate in Technical-Vocational Education

The Faculty of Education has been experimenting with different approaches to the training of Vocational Education teachers in both full-time and part-time programs. While the full-time one-year program has been very successful, there remains the ongoing problem of meeting the needs of the school commissions in remote geographic locations and of predicting the types of Vocational teachers that the school commissions are going to require, especially in the lower frequency subjects.

Since it has been impossible to forecast the total need, candidates who have been teaching Vocational Education subjects for at least one year, and who have no teacher training, are being admitted to a new experimental program which was initiated in 1973.

The program follows a philosophy of "on-the-job training", based on the premise that student and instructor will jointly solve the problems that arise in the teaching situation while making maximum use

of the milieu. For this reason, supervised field experience, seminars, and work-shops play a major role in this program.

The complete program includes 30 credits of course work offered over a period of three summers and two winters leading to a Certificate awarded by the University and to a Teaching Permit from the Ministry of Education.

To be admitted to the program candidates must possess a legal authorization valid in Quebec, and a contract to teach full time with a recognized school board.

Address all inquiries and applications to:

Program Director
Vocational Education
3700 McTavish Street
Montreal, Quebec H3A 1Y2 392-8824

Applications should be received before 2nd May preferably earlier).

For program profile see page 29

Teacher Certification Program

This program was inaugurated at the request of the Ministry of Education to serve the needs of uncertified teachers now holding a Provisional Teaching Authorization and who are under contract to teach full time in a recognized school.

The courses in this 30 credit program are made available during the summer, and in the evenings during the fall and winter sessions. The admission requirements are:

1. a currently valid Quebec Provisional Teaching Authorization;
2. a contract to teach full time in a recognized institution.

Further information regarding this program may be obtained from the office of:

The Associate Dean, Extension
Faculty of Education
3700 McTavish Street
Montreal, Quebec H3A 1Y2
392-8828

For admission to the program apply to the Student Affairs Office.

For program profile see page 29

Program of Professional Development for College Teachers

This program was developed as a pilot project in close consultation with the Anglophone CEGEP's of Quebec in an attempt to meet the general staff development needs of the colleges and the particular needs of individual teachers. Because of the experimental nature of this program enrolment has been limited and acceptance of new candidates remains subject to review by the university. Nonetheless, candidates who have completed successfully all program requirements will be recommended to the Ministry of Education for a provincial teaching permit.

There will be no new admissions to this program for the academic year 1976-77.

For information regarding the status of professional development activities for college teachers contact:

Associate Dean, Extension
Faculty of Education
3700 McTavish Street
Montreal, Quebec H3A 1Y2
392-8807

For program profile see page 29

Diploma in Educational Administration

This new in-service program is designed to meet the needs of educational administrators who wish to obtain further knowledge and expertise in their field but who are unable to enrol in one of the post-graduate degree programs in Educational Administration. The focus for this Diploma is practice and will include both practical applications and critical appraisal of present practices in educational administration. The program has been developed at the request of school administrators and is expected to appeal to both school personnel (Principals, Vice-Principals, etc.) and to those engaged in other types of educational administration (school board officers, CEGEP officials, adult education directors, finance officers, etc.)

The program has been developed in a sequential manner and will be available on a part-time basis during the Summer Sessions and intervening evening winter sessions when enrolment permits.

The basic admission requirements include a Bachelor's degree from a recognized university and at least two years of attested experience as an administrator in the educational milieu. Preference will be given to those currently engaged in full-time administrative work.

Requests for further information and for application materials should be directed to:

Diploma Program Director
Dept. of Educational Administration,
Faculty of Education
3700 McTavish Street
Montreal, Quebec H3A 1Y2
392-8833

2.4 GRADUATE DEGREES

(M.Ed., M.A., D.Ed., Ph.D.)

Through the Faculty of Graduate Studies and Research, the University offers a number of graduate degrees in Education. Many of these programs may be taken through full-time or part-time study in

the evenings and Saturday mornings, and/or during the Summer Session.

The M.A. degree provides opportunities for suitably qualified teachers to deepen their knowledge and to gain some facility in research in a major area of education. At present the areas in which students may elect to specialize are Educational Administration, Comparative Education, Educational Psychology, Educational Guidance, Physical Education, History and Philosophy of Education. Students complete their degree by presenting a thesis in the area of their specialization.

The structure of the M.Ed. degree is different since its purpose is to enable candidates to gain added competence in a professional field, e.g., in the teaching of a specific school subject or in counselling, administration, special education or reading. The courses leading to M.Ed. degrees in teaching subjects such as mathematics or geography are taken partly in the subject department concerned and partly in the Faculty of Education. There is no formal thesis in the M.Ed. degree programs but students may submit a paper or project-report as part of their work, or, in some cases, they may have a period of internship.

M.Ed. degrees are currently available in:

Counsellor Education
Educational Administration
Special Education
Teaching of Reading
" " Chemistry
" " Biology
" " Home Economics
" " Geography
" " History
" " Mathematics
" " Physics
" " French as a Second Language
" " English as a Second Language

(Other Teaching Subjects may be offered if demand so warrants)

Awaiting University approval is an M.Ed. degree in Educational Psychology.

The Faculty has one formal doctoral program. This is a professional degree in Counsellor Education which is intended to enable selected students who have already attained the level of the M.Ed in Counsellor Education to continue their studies in breadth and depth and to carry out a significant inquiry to be reported as a doctoral thesis.

At present the Faculty of Education does not offer a formal program leading to a Ph.D. However, under the Regulation set out in paragraph 21 of the **Announcement of the Faculty of Graduate Studies and Research** it is possible for exceptionally well qualified candidates to proceed to the degree of Ph.D. by making direct application to the Dean of the Faculty of Graduate Studies and Research. Such candidates should have a very clear idea at the outset of the area of their prospective research. Currently the Departments of Social Foundations of Education, Educational Psychology, Educational Administration and English (Reading) have doctoral students under this provision. (A Ph.D. in Educational Psychology and a D.Ed. in Educational Administration, are in the developmental stage).

The admission requirements for most M.A. and M.Ed. programs are that candidates must hold an undergraduate degree from a recognized university, with second class standing in at least one continuation subject, and also a Permanent Quebec Teaching Diploma or its equivalent. However, teacher certification requirements may be waived for candidates applying for M.A. programs in Counsellor Education, Physical Education, History of Education, Philosophy of Education and Comparative Education. Candidates are advised that the awarding of a Master's degree does not certify them to teach in the Quebec public schools.

For the D.Ed. degree in Counsellor Education, candidates must hold the degree of M.Ed. in Counsellor Education of McGill University, or its equivalent, and have maintained a good second class standing in the degree. In addition, applicants must supply certain personal and educational data, take certain tests and submit to an interview procedure. For candidates who do not meet all of the above requirements, courses of qualifying study may be prescribed.

Further specific requirements for particular degrees, and other information, should be sought, before an application is made, from the

Director of Graduate Studies,
Faculty of Education
3700 McTavish Street
Montreal,
Quebec H3A 1Y2
Canada.

NOTE 1. Summer session and Winter session candidates in Counsellor Education and Educational Administration are required to apply by March 1. Other candidates applying for admission for the first time and wishing to start in the Summer Session must apply before April 1, and those interested in commencing studies in the Fall must apply by July 3. Application in some programs will close prior to these deadlines when all places have been filled.

NOTE 2. Admission to the Faculty of Graduate Studies and Research for graduate programs in Education is granted by the Dean of the Graduate Faculty on the basis of undergraduate record and satisfactory professional training. Admission to the appropriate courses is granted by the individual departments of the Faculty of Education, and, where appropriate, by the departments concerned in other Faculties in consultation with the Faculty of Education.

3 PROGRAM PROFILES

3.1 DEGREE PROGRAMS

All the programs leading to the Bachelor of Education degree are designed primarily to accommodate the graduates of Quebec's new and still developing Colleges (CEGEPS) who aspire to a career in the teaching profession.

While requiring an academic and professional concentration which is essential for the candidate's basic preparation as a teacher in a given subject area and/or level of education, these programs also provide for the selection of a broad range of optional courses. This flexibility is intended to satisfy the diverse needs and interests of each student as these are perceived by the Faculty (staff advisor) or by the students themselves.

Each program, therefore, requires the completion of at least ninety (90) course credits in academic and professional studies chosen in consultation with a staff advisor (see 1 below) according to the following pattern which differs slightly from program to program:

a) A minimum of thirty (30) course credits in an **ACADEMIC CONCENTRATION** (see 2 below);
b) A minimum of thirty (30) course credits in an **EDUCATION CONCENTRATION** (see 3, below);
c) A maximum of fifteen (15) course credits which are determined by **DEPARTMENTAL SELECTION** (see 4 below);
d) A maximum of fifteen (15) course credits which each candidate may choose as **FREE ELECTIVES** (see 5 below).

GUIDELINES FOR COURSE SELECTIONS

1) Advisers

Before registration, each first year student will be introduced to a staff advisor with whom he will consult concerning program and course selection. Second and third year students will have an opportunity to make their selections in the month of April preceding registration in September. All new students (whatever year) will have the opportunity for pre-registration counselling (see Calendar dates). At registration, each student must present a copy of the Study Plan Form which was completed and signed by the staff advisor at the pre-registration meeting.

2) Academic Concentration

Academic concentration refers to those courses which provide content material related to the school subject(s) for which the teacher candidate is preparing, for example, English, History, Chemistry, etc...

For selection of available courses students are referred to the *University Timetable* and the *Announcements* of the Faculties of Arts, Science, Music, and Religious Studies. For academic courses offered by the Faculty of Education see Section 4 of this booklet.

3) Education Concentration

Education concentration refers to those courses, both required and elective, which deal with educational theory and practice. These courses are found in a FIELD EXPERIENCE SEMESTER (FES) and, depending on the program, either scattered through the remaining five semesters or grouped in a BASIC EDUCATION SEMESTER (BES).

The **required** education courses for each program are indicated by number and title within the profile given for each program (see below). The **elective** courses are intended to supplement the studies undertaken in the required courses, offering the opportunity for study in greater depth or breadth of both the theoretical and practical elements of education. In consultation with a staff advisor, students may choose electives from those listed on page 18. Selection of a course not included here requires the approval of the Associate Dean (Academic).

4) Departmental Course Selection

Departmental course selection refers to those courses which are determined for each student or group of students by the Department responsible for the teaching area and/or level for which each student is preparing (example: for English, Secondary level, Department of Education in English; for elementary schools, early childhood. Department of Elementary Education, etc.). Whatever the nature of the courses selected (academic or education) they do not replace the requirements of the education concentration or the academic concentration. Thereby, the Department is able to supplement basic program requirements with other courses judged most likely to lead to a well-balanced profile relative to both the individual needs of each student and the teaching competencies demanded by the profession.

5) Free Electives

Free electives refer to those courses, which may be chosen by the student in order to fulfill perceived needs or to pursue areas of scholarly interest. Thus, the student is free to enrol in any course (academic or education) offered by the University within the limits established by timetables, prerequisites, faculty jurisdictions, etc.

Before making selections, students are urged to discuss the matter with Departmental advisors or other competent counsellors. Although not

required, it is recommended that the student use the opportunity provided by these free electives to plan a coherent package of course selections which complement the basic program according to individual needs.

Suggestions for Free Electives

a) to prepare for graduate study in a subject discipline, additional courses in the **ACADEMIC CONCENTRATION;**

b) to prepare for graduate study in Education, a group of courses from a selected area (for example, Educational Psychology and Sociology of Education, Foundations of Education);

c) to support the minimum requirements of a General Secondary program, a choice of additional academic and curriculum courses in the areas of concentration;

d) to supplement preparation in elementary education, appropriate courses offered in Psychology, curriculum, or related academics;

e) to provide background for those who intend to teach in Catholic schools, selected courses in Catholic studies;

f) to enhance the basic teaching techniques, courses available in Educational Media.

For a full range of course offerings which might serve this purpose, consult the *Announcements* of other faculties, especially those of Arts and Science. Courses available as **FREE ELECTIVES** in the Faculty of Education may be selected from the List of Course Offerings (Section 4) in consultation with a Faculty adviser.

ELECTIVES RECOMMENDED FOR SECONDARY SCHOOL CANDIDATES

(Note: X denotes Field Experience component)

X 414-377	Adolescence and the Process of Education	3 credits
X 427-374	Language in the Secondary School (U2, U3) Prerequisite	3 credits
427-576	Reading in the Content Fields (U2, U3) section for B.Eds.	3 credits

ELECTIVES RECOMMENDED FOR ELEMENTARY SCHOOL CANDIDATES

(Note: X denotes Field Experience component)

X 414-208	The Development of Personality and Social Behaviour in the School Age Child	3 credits
X 414-340	Education of Exceptional Children	3 credits
X 414-341	General Methods in Special Education	3 credits
417-443	Perspectives on Elementary Science Education (U3)	3 credits
428-443	Perspectives on Elementary Mathematics Education (U3)	3 credits
427-343	Advanced Reading Instruction — Elementary School (U2, U3) Pre-requisites	3 credits
427-499	Processes in Reading (U3) Pre-requisites	3 credits

ELECTIVES RECOMMENDED FOR ALL CANDIDATES

(Note: X denotes Field Experience component)

411-394	Administration of Education in Quebec	3 credits
412-304	Group Processes	3 credits
X (413-403)	Education of Minority Groups	3 credits
413-405	The Critical Spirit and Education	3 credits
413-406	Introduction to Comparative Education	3 credits
413-407	Education and Society in Quebec	3 credits
413-408	Human Values and Education	3 credits
413-409	Women and Education	3 credits
413-410	Women in Higher Education	3 credits
414-201	The Nature and Conditions of School Learning	3 credits
414-203	Education and Society	3 credits
X 414-205	Sociology of Education — an overview	3 credits

x 414-249	Creativity and Its Cultivation	3 credits
414-304	Measurement and Evaluation in Education	3 credits
414-305	Non-Verbal Communication	3 credits
x 414-308	Sociology of the Classroom	3 credits
(414-310)	Computer Applications in Education	3 credits
414-343	Introduction to Diagnosis & Assessment	3 credits
x (414-346)	Talented and Gifted Students	3 credits
x 414-394	Cognitive Development in the School Age Child and Adolescent	3 credits
414-396	The Nature of Intelligence	3 credits
414-441	Behavioural Problems of Exceptional Children (Pre-requisites)	3 credits
x 414-456	Application of Psychological Principles to Educational Problems	3 credits
x 414-492	Psychology and Instructional Design	3 credits
414-495	Seminar in Special Topics (Ed. Psych & Sociology of Education)	3 credits
414-496	Individual Reading Course (Ed. Psych & Sociology of Education)	3 credits
x 415-398	Philosophy of Catholic Education (for those intending to teach in Catholic schools)	3 credits
427-305	Experiences in Communication	3 credits
431-305	Psycholinguistics and Second Language Teaching	3 credits
431-345	The Bilingual Class	3 credits
432-204	Media I	3 credits
432-205	Film Production and Film Criticism	3 credits
432-306	Educational Television	3 credits
434-492	Psychology of Motor Performance	3 credits

Major Program Profiles

For those who wish to prepare for a teaching career at the secondary school level, the Faculty offers MAJOR PROGRAMS in a variety of concentrations: BIOLOGY, CHEMISTRY, ENGLISH, ENGLISH or FRENCH (SECOND LANGUAGE), GEOGRAPHY, HISTORY, LATIN, MATHEMATICS, MODERN LANGUAGES (GERMAN, ITALIAN or SPANISH) or PHYSICS.

Profiles and Course requirements for these 90 credit MAJOR PROGRAMS are as follows:

Academic Concentration: 30 credits in the selected subject. Courses should be chosen in consultation with a departmental advisor from the offerings available in the Faculty of Arts or Science. It is recommended that these courses be completed by the end of the second year and before the major field experience.

Education Concentration: 36 credits to be completed normally according to the following semester profile:

Sem. 1: 413-204A (Required)
Sem. 2: 414-260B; and a field based course in Observation and Familiarization (---291B) through teaching area department (both required)
Sems. 3 & 4: 9 credits selected from list of available Education electives (see page 18). At least 3 credits must be taken in a course which includes a field component.
Sem. 5: 435-376A; an associated curriculum course (both required); and 3 additional (elective) credits.
Sem. 6: 413-420B; and a Special Project (---490B) supervised by department of choice (both required).

Departmental Course Selections — 9 credits to be authorized by Departmental Chairman or adviser according to individual student's scholastic background, career orientation, and program need. May be taken any time but semester 5.

Free Electives — 15 credits chosen by the student in consultation with departmental advisor from any available course in the University (for more detail, see page 17). May be taken any time but semester 5.

Major in Teaching of Art

Education-Required Courses

413-204A	Sem. 1	3 credits
448-305B	Sem. 4	6 credits
435-444B	Sem. 4	3 credits
435-376A	Sem. 5	9 credits
426-473A	Sem. 5	3 credits

Education-Elective Courses

2 courses	Sem. 4	6 credits
1 course	Sem. 5	3 credits

Academic Concentration

SEMESTERS 1 & 2

Students must take:

426-204	Drawing	
426-296	Basic Design	
426-208	Ceramics I	
426-206	Graphics I	12 credits

and 2 of the following:

426-205	Painting II	
426-209	Ceramics II	
426-297	Design II	
426-207	Graphics II	
426-398	Canadian Art History	6 credits

SEMESTER 3

Students must select 3 courses from 2 areas of concentration. 9 credits

SEMESTER 6

Students must select 1 course from 2 areas of concentration (above) 3 credits.

Departmental Course Selections

1 course	Sem. 2	3 credits
426-342A	Sem. 3	3 credits
2 courses	Sem. 6	6 credits

Free Electives

2 courses	Sem. 1 & 2	6 credits
1 course	Sem. 3	3 credits
2 courses	Sem. 6	6 credits

NOTE 1: Students are required to present an exhibition of their work at the end of the third year.

NOTE 2: Sketching School — a ten day resident sketching school (Labour Day week-end through early September) is offered to students who have completed Painting II (426-205). This will be considered an optional part of Painting V (426-404) but may be taken in the first summer. Students will be expected to pay transportation, room and board (cost will be kept to a minimum).

Major in Physical Education

Education-Required Courses

413-204A	Sem. 1	3 credits
434-342B	Sem. 2	3 credits
414-260B	Sem. 2	3 credits
435-246B	Sem. 2	3 credits
414-208A or		
414-377A	Sem. 2	3 credits
435-346B or		
435-376B or		
435-496B	Sem. 6	9 credits
434-494B	Sem. 6	3 credits

Education-Elective Courses

One in semester 1	3 credits
Two in semester 5	6 credits

Departmental Selection Courses

434-203A	Sem. 1	3 credits
434-206B	Sem. 2	3 credits
435-444B or		
435-474B or		
434-480B	Sem. 4	3 credits

Academic Concentration

434-205A	Sem. 1	3 credits
434-331A	Sem. 3	3 credits
434-391B	Sem. 4	3 credits
434-492A	Sem. 5	3 credits

Physical Education Skills and Techniques (see page 50)

3 credits in each of 6 sem. 18 credits

Free Electives

Sem. 3	6 credits
Sem. 4	6 credits
Sem. 5	3 credits

NOTE 1: Costume & Equipment: All students pursuing a major program in Physical Education are required to wear a costume appropriate to the activity as approved by the instructor. Students are also responsible for providing some items of personal sports equipment such as skis, skates, tennis racquets, etc.

NOTE 2: All students in the physical education major program must complete a minimum of 18 semester credits in physical educational Skill and Techniques courses before graduation. Of these, 11 credits and 10 credits are required of men and women respectively. The remaining credits are to be chosen from the optional list. Registration in an advanced activity course requires at least a "C" grade in the introductory course and permission of the instructor. Not all elective activity courses will be offered each year. It should be possible, however, for a candidate to elect any of these options sometime during the three year program. (see Section 4, page 51).

Major in Religious Education (Catholic)

Education-Required Courses

413-204A	Sem. 1	3 credits
414-260B	Sem. 2	3 credits
415-291B	Sem. 2	1 credit
415-341B	Sem. 4	3 credits
435-496A	Sem. 5	9 credits
415-392A	Sem. 5	3 credits
413-420B	Sem. 6	3 credits
415-490B	Sem. 6	2 credits

Education-Elective Courses 9 credits

Semesters 3 & 4: 9 credits (3 of which should include a field component)
Semester 5: 3 credits. These courses may be selected from the list of available offerings (see page 18).

Departmental Selection Courses 9 credits

415-341 in Semester 4 and 6 credits which may be authorized in any semester except 5.

Academic Concentration 30 credits

Recommended courses are: 415-200, 290, 206, 207, 208, 391, 394, 395 and 396.

Free Electives 15 credits
May be taken in any semester except 5.

NOTE: Candidates for Catholic schools should seek advice from the Department of Catholic Studies.

Major in Religious Education (Protestant)

Education-Required Courses

413-204A	Sem 1	3 credits
414-260B	Sem 2	3 credits
421-291B	Sem 2	1 credit
435-496A	Sem 5	9 credits
421-372A	Sem 5	3 credits
413-420B	Sem 6	3 credits
421-490B	Sem 6	2 credits

Education-Elective Courses 9 credits

Semesters 3 & 4: 9 credits (3 of which should include field component
Semester 5: 3 credits. These courses may be selected from the list of available offerings (see page 18).

Departmental Selection Courses 9 credits

421-342 in Sem. 3 and 6 credits which may be authorized in any semester except 5.

Academic Concentration 30 credits

For Semesters 1 & 2 the following six are recommended: 260-201A, 202B, 252A, 253B, 341A, 371B.

For Semesters 3 & 4 the following four are recommended: 260-345, -408, -410, -420.

Free Electives 15 credits
May be taken in any semester except 5.

Note: Candidates for Protestant schools should seek the advice of Prof. D. MacNeill, Department of Elementary Education.

Major in Religious Education (Jewish)

YEAR I

Academic Concentration 18 credits
Education-Required (413-204A) 3 credits
Education-Elective 3 credits
Free Electives 6 credits

YEAR II

Academic Concentration 12 credits
Departmental Selections 9 credits
Free Electives 9 credits

YEAR III

Education-Required Courses (1G Pattern)

413-500D	422-401A
414-500D	422-404A
	422-402B
446-505D	422-400B
435-574D	411-592B

NOTE: Students who have already taken 413-204 will be exempt from taking 411-592.

NOTE: Students who choose this option are referred to Prof. S. Epstein, 3511 Peel Street (Tel. 392-8257) for advice and consultation.

Major in Home Economics Education

Students who elect to follow a Major program in Home Economics are required to enrol in the courses offered in the School of Food Science for the first four semesters. During that period they are required to complete 60 course credits of which at least 30 must be in the Academic Concentration. Students then enrol for 30 course credits in professional subjects at the Faculty of Education.

THIRD YEAR (1G Pattern)

413-500D	6 credits
414-500D	6 credits

418-472A	3 credits
418-473B	3 credits
418-474B	3 credits
426-298A	3 credits
435-574D	6 credits
411-592B	1 credit
446-505D	0 credit

Note: The addition of 432-204A INTRODUCTION TO MEDIA is highly recommended, but at extra cost to the student.

Major in the Teaching of French Language

Education-Required Courses

413-204A	Sem 1	3 credits
414-260B	Sem 2	3 credits
431-291B	Sem 2	1 credit
435-346A	Sem 5	9 credits
431-344A	Sem 5	3 credits
413-420B	Sem 6	3 credits
431-490B	Sem 6	2 credits

Education-Elective Courses 9 credits

Semesters 3 & 4: 9 credits (3 of which should include a field component).
Semester 5: 3 credits. These courses may be selected from the list of available offerings (see page 18).

Departmental Course Selections 9 credits

431-301, -305 & -373, in semesters 3, 4 and 6 respectively.

Academic Concentration 30 credits

In first year, a student must select 18 credits from the following:

126-225D	104-200B
126-229D	104-201D
126-245D	104-230A
126-247D	104-241B
126-264D	157-200A
126-275D	157-203D
104-200A	157-226A

In second year, a student must select 12 credits from the following:

126-317A	104-410B
126-329D	104-425A
126-333A	157-316A
126-334B	157-336B
126-342D	157-370D
126-345D	157-406B
126-442D	157-480B
104-321B	

Free Electives 15 credits

May be taken in any semester except 5.

General Programs Secondary Education

For degree candidates who seek preparation at the secondary level. Select two (2) subject areas:

BIOLOGY, CHEMISTRY, ENGLISH, ENGLISH or FRENCH (Second Language), GEOGRAPHY, HISTORY, LATIN, MATHEMATICS, MODERN LANGUAGES (German, Italian or Spanish), PHYSICAL EDUCATION, PHYSICS, and RELIGIOUS EDUCATION (Catholic or Protestant).

Profiles and Course requirements for these 90 credit GENERAL PROGRAMS are as follows:

Academic Concentration: 36 credits (18 credits in each of the selected subjects). Courses should be chosen in consultation with a department adviser from the offerings available in the Faculty of Arts, Science, Religious Studies, or Education. It is recommended that these courses be completed by the end of the second year and before the major field experience.

Education Concentration: 36 credits to be completed normally according to the following semester profile:

Sem. 1: 413-204A (Required)

Sem. 2: 414-260B; and a field based course in Observation & Familiarization (---291B) through teaching area department (both required)

Sems. 3 and 4: 9 credits selected from list of available electives (see page 18). At least 3 credits must be taken in a course which includes a field component.

Sem. 5: 435-377A; curriculum courses (3 credits each) relevant to teaching subjects (all required).
Sem. 6: 413-420B; and a Special Project course (---490B) supervised by department of choice (both required).

Departmental Course Selections — 3 credits to be authorized by Departmental Chairman or advisor according to individual student's background, orientation, and need. May be taken in any semester except 5.

Free Electives — 15 credits chosen by the students in consultation with departmental advisor from any available course in the University (for more detail, see page 17). May be taken in any semester except 5.

General Programs Elementary Education

Candidates admitted to degree programs in Elementary Education (Nursery-Kindergarten, Early or Later Childhood) must meet the following program requirements:

Academic Concentration

30 credits in five (5) subject areas chosen in the prescribed pattern:
12 credits in first subject area (Option I)
9 credits in second subject area (Option II)
3 credits in third subject area (Option III)
3 credits in fourth subject area (Option IV)
3 credits in fifth subject area (Option V)

Note: Subject areas are restricted to those taught in elementary schools: Art, English, French, Mathematics, Music, Physical Education, Science, Social Studies and Religion. Those selected as OPTION I OR II carry the departmental requirements listed hereunder:

Art — Introductory Drawing or Basic Design must be taken as first course.
English — Minimum of 3 credits in Linguistics is required.
Minimum of 3 credits must be taken in Faculty of Arts.
French (Second Language) Interview with French Department is required if selecting French as 1st or 2nd option, and before acceptance into French Methods course.
Mathematics — Background Mathematics for Elementary teachers is strongly recommended.
Music — May **not** be taken as 1st or 2nd option except with consent of Music Department chairman.
Physical Education — Foundations of Movement is required.
Protestant Studies — Living with Questions is required.
Science — Elementary Biology — pre-requisite to all Biology courses. Background Science for Elementary teachers — strongly recommended, but **not** open to students with strong Science background from CEGEP.
Social Studies — Including work done at the college level, course selections should ensure background in Canadian History and Human & Physical Geography.

Education Concentration

9 credits in Basic Education (413-204 & 448-305)
12 credits in relevant Field Experience
3 credits in Reading and Language Arts (or 3 credits in Program Skills in N-K program.)
3 credits in Mathematics Curriculum (or Primary Science in N-K program).
6 credits in Education Electives

Departmental Course Selections

15 (12 N-K) credits determined by the Department of Elementary Education. If not otherwise required (e.g. Math, Reading & Language Arts), students must register for curriculum courses related to academic **OPTIONS I & II.**

NOTE: A grade of "C" or better is required in all courses of academic OPTIONS I & II and in the associated curriculum courses.

Free Electives

15 (12 N-K) credits chosen by the student in consultation with a departmental advisor.

Elementary Education — Nursery & Kindergarten

SEMESTER 1

Academic Concentration 12 credits

Students will select 4 academic courses in at least 3 (options I, II, III) of the following subject areas:
Art, English, French, Mathematics, Music, Physical Education, Science, Social Studies, and Religion, (one of which must be Art, Music or Physical Education).

NOTE: Two of the subject areas elected must be continued in second and third years (options I and II).

Students must take 413-204 INTRODUCTION TO EDUCATION

SEMESTER 2 (BASIC EDUCATION SEMESTER)

448-305 — INTEGRATED STUDY OF TEACHING & LEARNING (6 credits)
435-215 — DIRECTED OBSERVATION — PRE-SCHOOL (3 credits)
417-312 — PRIMARY SCIENCE (3 credits)
EDUCATION ELECTIVE (3 credits)

SEMESTERS 3 AND 4

Departmental Course Selections 12 credits

Students must take 427-305, 433-322, 433-412, and 3 credits authorized by Departmental Chairman or advisor.

Academic Concentration (12 credits)

Students must continue Option I (6 credits) and Option II (3 credits) and select Options IV & V (3 credits each).

Free Electives (6 credits)

SEMESTER 5 (FIELD EXPERIENCE SEMESTER)

435-411 — FIELD EXPERIENCE — NURSERY & KINDERGARTEN (9 credits)
433-411 N — K CURRICULUM (3 credits)
EDUCATION ELECTIVE (3 credits)

SEMESTER 6

Academic Concentration:
— Option I (3 credits)
— Option II (3 credits)

Free Electives (9 credits)

Elementary Education — Early or Later Childhood

SEMESTER 1

Academic Concentration (12 credits)

Students will select 4 academic courses in at least 3 of the following subject areas (options I, II, III): Art, English, French, Mathematics, Music, Physical Education, Science, Social Studies, and Religion.

NOTE: Two of the subject areas selected must be continued in second and third years (Options I & II.)

Education Concentration

413-204 INTRODUCTION TO EDUCATION (3 credits)

SEMESTER 2 (BASIC EDUCATION SEMESTER)

448-305 — INTEGRATED STUDY OF TEACHING & LEARNING (6 credits)
435-245 — DIRECTED OBSERVATION — ELEMENTARY (3 credits)
CURRICULUM COURSE
Early Childhood (427-221 or 428-322) 3 credits
Later Childhood (427-231 or 428-332) 3 credits
EDUCATION ELECTIVE (3 credits)

SEMESTERS 3 AND 4

Departmental Course Selections (15 credits)
EARLY CHILDHOOD — In semester 3 — select 427-221 or 428-322, whichever not yet taken, followed by 427-222 in semester 4; and 9 credits in curriculum courses as authorized by advisor.

NOTE: Students who completed 427-221 in semester 2 must take 427-222 in semester 3.

LATER CHILDHOOD — In semester 3, select 427-231 or 428-332, whichever not yet taken, followed by 427-232 in semester 4; and 9 credits in curriculum courses authorized by advisor.

NOTE: Students who completed 427-231 in semester 2 must take 427-232 in semester 3.

Academic Concentration (12 credits)

Students must continue Options I and II and select remaining options.

Free Electives (3 credits)

SEMESTER 5 (FIELD EXPERIENCE SEMESTER)

Education Concentration (15 credits)

EARLY CHILDHOOD — 435-421 and 433-421

LATER CHILDHOOD — 435-431 and 433-431

Education elective (3 credits) — see p. 18

SEMESTER 6

Academic Concentration (6 credits)

Option I (3 credits)
Option II (3 credits)

Free Electives (9 credits)

NOTE: Based on alphabetical listing, students will be registered in the Field Experience Semester in either September or January. Any contrary arrangement must have the approval of the Department of Elementary Education. Accordingly, U3 semesters are interchangeable.

3.2 DIPLOMA PROGRAMS

The Faculty of Education offers a variety of one-year professional programs in preparation for a teaching career in elementary or secondary education. These programs are open to candidates who hold a university degree. For admission details, see Section 2, page 10.

Secondary Education

Candidates will be admitted to prepare in either one or two teaching subject areas.

Required Courses

411-592 — SCHOOL LAW
413-500 — FOUNDATION STUDIES IN EDUCATION or
415-595 — PHILOSOPHY OF CATHOLIC EDUCATION
414-500 — EDUCATIONAL PSYCHOLOGY
427-505 — EXPERIENCES IN COMMUNICATION
435-574 — TEACHING
446-505 — ORIENTATION TO SECONDARY SCHOOL TEACHING

Students in the Secondary Diploma Program are required to complete two periods of student teaching comprising three weeks in the first semester and five weeks in the second, in selected high schools. During these periods, students are expected to commit themselves exclusively to the teaching programs arranged by the Faculty in cooperation with the schools.

From the following list, the candidate preparing in a single teaching subject **CHOOSES ONE,** the candidate preparing in two teaching subjects **CHOOSES TWO:**

ART **	426-572
BIOLOGY*	417-576
CHEMISTRY*	417-577
ENGLISH	427-572
ENGLISH (Second Language)	431-558
GENERAL SCIENCES*	417-575
GEOGRAPHY	430-572
HOME ECONOMICS**	418-472 & 473
HISTORY	430-575
MATHEMATICS	428-572
PHYSICS*	417-578
RELIGION (Catholic)	415-571
RELIGION*(Protestant)	421-572
FRENCH	431-572
LATIN	431-578
GERMAN	431-579
ITALIAN	431-579
SPANISH	431-579
SOCIAL STUDIES	430-579

* Not available as a single subject.
** Available as a single subject only.

Elective Courses

The candidate preparing in a single teaching subject must take an additional Advanced Curriculum and Instruction course in his or her teaching subject (List A) and one other course (List B)

List A

415-503	Catholic Studies
418-474	Home Economics
426-573	Art
427-573	English
428-573	Mathematics
430-569	Social Studies
430-573	Geography
430-576	History
431-573	Second Languages

List B

411-575	Secondary School Curriculum
415-573	Living With Insight (Catholic Studies)
427-576	Reading in the Content Fields
431-501	Linguistics Applied to Second Language Teaching
431-504	Cultural Content of Second Language Programs
432-204	Educational Media I

Note: Students in Home Economics must take 426-298, although if an equivalent course has been taken elsewhere, permission may be granted to take another course from List B.

Technical/Vocational and Business Education Concentrations (Diploma or Certificate)

Required Courses

411-592 — SCHOOL LAW
413-500 — FOUNDATION STUDIES IN EDUCATION or
415-595 — PHILOSOPHY OF CATHOLIC EDUCATION
414-500 — EDUCATIONAL PSYCHOLOGY
427-505 — EXPERIENCES IN COMMUNICATION
435-574 — STUDENT TEACHING
446-505 — ORIENTATION TO SECONDARY SCHOOL TEACHING

Technical/Vocational Concentration only:

436-572 — METHODS IN TEACHING TECHNICAL/VOCATIONAL SUBJECTS
436-574 — ORGANIZATION AND ADMINISTRATION IN TECHNICAL/VOCATIONAL SUBJECTS

Business Education Concentration only:

436-562 — TEACHING METHODS IN BUSINESS EDUCATION
436-564 — ORGANIZATION AND ADMINISTRATION IN BUSINESS EDUCATION

Elective Course(s)

Students in the Technical/Vocational and Business Education concentrations will take the following courses:

436-575 — CURRICULUM DEVELOPMENT IN TECHNICAL/VOCATIONAL EDUCATION
436-576 — EDUCATIONAL EVALUATION IN TECHNICAL/VOCATIONAL EDUCATION

or

the equivalent of one full course from options available in the Faculty of Education or in other faculties.

Music Education

Candidates with an acceptable degree in school music (or equivalent) will be admitted to a program which provides preparation for the teaching of music at both the elementary and secondary school

levels. Students will take all of the REQUIRED COURSES listed in the previous section together with the following:

429-542 — ELEMENTARY MUSIC CURRICULUM AND INSTRUCTION
429-572 — SECONDARY MUSIC CURRICULUM AND INSTRUCTION

Religious Studies (Jewish)

A program offered for candidates with an acceptable undergraduate degree and with appropriate background in Jewish Studies as a preparation for the teaching of Jewish subject matter at the elementary and secondary levels. Students will take all of the REQUIRED COURSES listed in the previous section together with the following:

422-400 — TEACHING CUSTOMS & CEREMONIES
422-401 — TEACHING BIBLICAL LITERATURE I
422-402 — TEACHING BIBLICAL LITERATURE II
422-404 — TEACHING HEBREW/YIDDISH-SECOND LANGUAGE

Elementary Education — Early or Later Childhood

Candidates will be admitted to prepare for teaching at the Early or Later Childhood levels.

The integration of theoretical and practical dimensions of the various courses is provided through an internship in schools and through a year-long course, Orientation to Teaching, given by the student's advisor.

Students are required to teach in schools two or three days each week throughout the year in addition to following studies in the Faculty. Course work in Semester I is approximately 13 hours per week and 8 hours in Semester 2. Thus, students are advised that the Diploma Program is demanding and should consider that five full days per week are necessary to meet the requirements.

ALL CANDIDATES

411-592 — SCHOOL LAW
413-502 — SOCIAL FOUNDATIONS OF EDUCATION or
415-594 — PHILOSOPHY OF CATHOLIC EDUCATION
414-500 — EDUCATIONAL PSYCHOLOGY
435-544 — STUDENT TEACHING
446-504 — ORIENTATION TO ELEMENTARY SCHOOL TEACHING

EARLY CHILDHOOD

427-522 — READING & LANGUAGE ARTS
428-522 — MATHEMATICS

and ONE of

426-522 — ART
429-522 — MUSIC
434-521 — MOVEMENT

Two of the following:

415-547 — RELIGIOUS RESPONSE
417-532 — SCIENCE
421-542 — HUMAN & RELIGIOUS VALUES
426-532 — ART
429-522 — MUSIC
430-522 — SOCIAL STUDIES
431-522 — FRENCH CURRICULUM & INSTRUCTION
431-547 — TEACHING ENGLISH AS A SECOND LANGUAGE
434-521 — MOVEMENT EDUCATION

LATER CHILDHOOD

427-532 — READING & LANGUAGE ARTS
428-532 — MATHEMATICS
430-532 — LOCAL & COMMUNITY STUDIES

Two of the following:

415-547 — RELIGIOUS RESPONSE
417-532 — SCIENCE
421-542 — HUMAN & RELIGIOUS VALUES
426-532 — ART
427-594 — CREATIVE DRAMA FOR THE CLASSROOM
429-532 — MUSIC
430-533 — COMPARATIVE SOCIAL STUDIES
431-532 — FRENCH
431-547 — TEACHING ENGLISH AS A SECOND LANGUAGE
432-204 — EDUCATIONAL MEDIA
434-531 — PHYSICAL EDUCATION

Elementary Education — French (Second Language)

411-592 — SCHOOL LAW
413-502 — SOCIAL FOUNDATIONS OF EDUCATION, or
415-594 — PHILOSOPHY OF CATHOLIC EDUCATION
414-500 — EDUCATIONAL PSYCHOLOGY
431-501 — LINGUISTICS APPLIED TO SECOND LANGUAGE TEACHING
431-544 — TEACHING FRENCH AS A SECOND LANGUAGE
431-545 — THE BILINGUAL CLASS
431-540 — ANIMATION TECHNIQUES
435-544 — CLASSROOM STUDENT TEACHING
446-505 — ORIENTATION TO ELEMENTARY SCHOOL TEACHING

Any one Early or Later Childhood elective except

French and Reading and Language Arts (see above).

3.3 PART-TIME PROGRAMS

BACHELOR OF EDUCATION FOR CERTIFIED TEACHERS (ELEMENTARY EDUCATION)

Candidates enrolled in this 90-credit program must complete course work within the following general pattern:

1) Thirty (30) academic credits in five (5) subject areas relevant to elementary education in a 12-9-3-3-3 pattern (i.e. 12 credits in one subject, 9 credits in a second subject, and 3 credits in each of three other subject areas.)

NOTE: Subject areas, relevant to elementary education, in broad terms, are English, French, History, Geography, Mathematics, General Science, Religion, Art, Music, Physical Education, etc....

2) Fifteen (15) academic credits chosen in consultation with departmental advisor.

3) Fifteen (15) credits as **FREE ELECTIVES** (courses selected by candidate after consultation with departmental advisor). See Guidelines, page 17.

4) Thirty (30) credits in a prescribed "education package" as prepared by the Faculty of Education. At the present time, these "packages" are available in Reading, Kindergarten, Special Education, Ed. Media, and Second Language Teaching as described below.

OR

Fifteen (15) credits as selected by the candidate and fifteen (15) education credits as determined by the Department of Elementary Education.

QUEBEC DIPLOMA IN SPECIAL EDUCATION

Required Pre-requisite Courses (12 credits)

These courses must be completed before proceeding to further course work.

414-340 — EDUCATION OF EXCEPTIONAL CHILDREN (3 credits)
414-341 — GENERAL METHODS IN SPECIAL EDUCATION (3 credits)
414-342 — ORGANIZATION OF SPECIAL EDUCATION PROGRAMS (3 credits)
414-343 — INTRODUCTION TO DIAGNOSIS AND ASSESSMENT (3 credits)

Required Courses (12 credits)

414-344 — PRACTICUM IN DIAGNOSIS AND ASSESSMENT OF LEARNING PROBLEMS (3 credits)
414-440 — COGNITIVE AND PSYCHOMOTOR PROBLEMS OF EXCEPTIONAL CHILDREN (3 credits)
414-441 — BEHAVIOURAL PROBLEMS OF EXCEPTIONAL CHILDREN (3 credits)
414-442 — PSYCHOLOGY OF LEARNING PROBLEMS (3 credits)

Electives (6 credits)

414-443 — SCHOOL — HOME — COMMUNITY RELATIONS IN SPECIAL EDUCATION (3 credits)
414-444 — MATERIALS IN SPECIAL EDUCATION (3 credits)
414-445 — VOCATIONAL HABILITATION OF EXCEPTIONAL CHILDREN (3 credits)
414-446 — SPECIAL TOPICS IN THE EDUCATION OF EXCEPTIONAL CHILDREN (3 credits)
414-240 — CRAFT COURSE (0 credit)

Courses may be selected from other departments in the university with the approval of the program director.

QUEBEC DIPLOMA IN READING INSTRUCTION

Required Courses (21 credits)

Candidates will normally take seven courses from the following. Please note special requirements where applicable.

1) Candidates must take at least two of the following three Reading Instruction courses. These two must be either 223 **and** 233 or 233 **and** 523.

427-223 Reading Instruction: Early Childhood (3 credits)

427-233 Reading Instruction: Later Childhood (3 credits)
427-523 Reading Instruction: High School (3 credits)

2) Candidates must take at least two of the following three Corrective Reading courses. These two courses must be either 224 **and** 234 or 234 **and** 577. In addition, the **Reading Instruction course at the same level is a prerequisite for a Corrective Reading course.** Both Corrective Reading courses are normally done in the same summer, making a full six week program. Due to time conflicts, no other courses can be done while enrolled in the corrective courses.

427-224 Corrective Reading Instruction: Early Childhood (3 credits)
427-234 Corrective Reading Instruction: Later

Childhood (3 credits)
427-577 Corrective Reading Instruction: High School (3 credits.)

3) **At least one** of the following courses must be taken:

427-344 Children's Literature (3 credits)
427-345 Literature for Young Adults (3 credits)

4) The following two courses must also be included:

427-533 Integrated Language Arts (3 credits)
427-576 Reading in the Content Fields (3 credits)

Electives (9 credits)

The remaining three courses in the diploma sequence are to be elected by the student **with the advice and consent of reading faculty members.** Students who do **not** plan study beyond the diploma level are encouraged to select electives in reading, special education, educational measurement, teaching English as a second language, or any other area of interest and utility. Students who are planning further study in reading are encouraged to elect educational measurement, introductory statistics, psycholinguistics, or other courses necessary to advanced study.

QUEBEC EDUCATIONAL MEDIA DIPLOMA

Required Courses (15 credits)

432-204 — EDUCATIONAL MEDIA I (3 credits)
432-205 — FILM PRODUCTION AND FILM CRITICISM (3 credits)
432-309 — THE LIBRARY RESOURCE CENTRE (3 credits)
432-405 — INDEPENDENT PROJECT (6 credits)

Electives (15 credits)

432-206 — CHILDREN'S LITERATURE (3 credits)
432-303 — PHOTOGRAPHY (3 credits)
432-307 — CATALOGUING AND CLASSIFICATION OF LIBRARY MATERIALS (3 credits)
432-308 — LIBRARY REFERENCE MATERIALS AND TECHNIQUES (3 credits)
432-304 — EDUCATIONAL MEDIA II (3 credits)
432-306 — EDUCATIONAL TELEVISION (3 credits)
432-404 — CONTEMPORARY DEVELOPMENTS IN EDUCATIONAL MEDIA (3 credits)

QUEBEC KINDERGARTEN DIPLOMA

Required Courses (24 credits)

414-214 — CHILD DEVELOPMENT (6 credits)
414-314 — DEVELOPMENTAL TESTING OF YOUNG CHILDREN (3 credits)
427-328 — CREATIVE MOVEMENT AND DRAMATICS (3 credits)
427-327 — CREATIVE DRAMATICS AND CHILDREN'S LITERATURE (3 credits)
433-312 — METHODS AND MATERIALS FOR THE KINDERGARTEN (3 credits)
429-212 — MUSIC FOR NURSERY — KINDERGARTEN TEACHERS (3 credits)
426-212 — ART FOR NURSERY — KINDERGARTEN TEACHERS (3 credits)

Electives (6 credits)

Candidates may select 6 credits from the following list in consultation with Departmental Advisor:

414-340 — EDUCATION OF EXCEPTIONAL CHILDREN (3 credits)
414-341 — GENERAL METHODS IN SPECIAL EDUCATION (3 credits)
414-342 — ORGANIZATION OF SPECIAL EDUCATING PROGRAMS (3 credits)
414-440 — COGNITIVE AND PSYCHOMOTOR PROBLEMS OF EXCEPTIONAL CHILDREN (3 credits)
414-441 — BEHAVIOURAL PROBLEMS OF EXCEPTIONAL CHILDREN (3 credits)
414-442 — PSYCHOLOGY OF LEARNING PROBLEMS (3 credits)
414-443 — SCHOOL — HOME — COMMUNITY RELATIONS IN SPECIAL EDUCATION (3 credits)
427-223 — READING INSTRUCTION — EARLY CHILDHOOD (3 credits)
427-224 — CORRECTIVE READING INSTRUCTION — EARLY CHILDHOOD (3 credits)

CERTIFICATE IN SECOND LANGUAGE TEACHING

Candidates enrolled in this program will complete the course requirements in three stages.

STAGE I — Five months of full-time course work (enrolment in September or January)

Required Courses (12 credits)

431-544 — TEACHING FRENCH AS A SECOND LANGUAGE (6 credits)
431-301 — APPLIED LINGUISTICS (3 credits)
SELECTED LANGUAGE COURSE (academic) (3 credits)

Elective Courses* (6 credits)

431-345 — BILINGUAL CLASS (3 credits)
431-304 — CULTURAL CONTENT (3 credits)
431-303 — MEDIA & SECOND LANGUAGE TEACHING (DIDACTIQUE INSTRUMENTALE) (3 credits)
431-306 — PHONOLOGY AND SECOND LANGUAGE TEACHING (3 credits)

431-307 — DIFFICULTIES ANTICIPATED IN SECOND LANGUAGE TEACHING (3 credits)
431-373 — IN-DEPTH STUDY OF CURRICULUM DEVELOPMENT IN SECOND LANGUAGE (3 credits)
431-302 — MEASUREMENT AND EVALUATION IN SECOND LANGUAGE EDUCATION (3 credits)
431-305 — PSYCHOLINGUISTIC IMPLICATIONS IN SECOND LANGUAGE TEACHING (3 credits)
431-340 — ANIMATION TECHNIQUES IN SECOND LANGUAGE TEACHING (3 credits)

*With Departmental authorization, up to 6 credits of the elective component may be academic course selections.

STAGE II — 431-360 SECOND LANGUAGE PRACTICUM. Guided and supervised practicum for **at least** one semester (6 credits).

STAGE III — Summer course work (six weeks) during which candidates will complete six credits in elective courses (selected from list provided in STAGE I above).

NOTE 1. Offering of elective courses will depend upon number of applicants and availability of instructors.

NOTE 2. Candidates who wish to benefit from the financial advantages provided through the Ministry of Education for this program are advised to contact their local school authorities for information on procedures to be followed.

CERTIFICATE IN TECHNICAL-VOCATIONAL EDUCATION

Candidates must complete the following 30 credits of course work:

436-266C Basic Integrated Study in Vocational Education (8 credits)
435-235D Supervised Field Experience — Vocational-Secondary (4 credits)
436-267C Development of Vocational Education in Quebec (2 credits)
436-268C Instructional Technology in Vocational Education (6 credits)
436-269D Instructional Design in Vocational Education (4 credits)
436-564C Organization and Administration in Business Education (6 credits)
or
436-574C Organization and Administration in Technical Education (6 credits)

The program is normally completed over a period of three summer and two fall/winter sessions following the sequence outlined above.

TEACHER CERTIFICATION PROGRAM

Candidates must complete 30 credits of course work selected in consultation with a program advisor according to the following pattern:

a) An appropriate Psychology (3 credits)
b) Quebec Education (including School Law) (3 credits)
c) A Subject Methodology (3 credits)
d) Supportive Teaching Strategies (or 2nd Subject Methodology) (3 credits)
e) Field Experience (6 credits)
f) Education Theory or Teaching Strategy Electives (12 credits)

PROGRAM OF PROFESSIONAL DEVELOPMENT FOR COLLEGE TEACHERS

Course work and practical experience in this program are divided into four areas:

1. Knowledge of the CEGEP and Junior and Community Colleges
   Education 449-580, College Education in Quebec (3 credits)

2. Theoretical and Practical Orientation in Education and Psychology
   Education 449-581, **Approaches to Collegial Learning and Teaching** (3 credits)
   Education 449-582, **Educational Theory and Instructional Strategies** (3 credits)

3. Field Experience
   Education 449-583, **Development of a Teaching Schema** (3 credits)
   Education 449-585, **Application of a Teaching Schema** (6 credits)
   *Education 449-586, **Field Project in Industry** (3 credits)

*This course is designed only for teachers engaged in the career sectors of the CEGEP program.

4. Elective Courses in Education and Psychology

For teachers in the career sectors who must follow a 12 credit Field Experience, there are nine credits open for elective courses. For other teachers, whose Field Experience consists of nine credits, there are twelve credits open for elective courses.

At this time only one elective course has been designed specifically for the college program and it is available only for teachers in the career sectors:

Education 449-584, Laboratory Teaching (3 credits)

Pending the development of other elective courses designed specifically for the college programs, a number of existing courses in the Faculty of Education have been used and adapted to the needs of college teachers with the cooperation of the departments concerned.

4 COURSE OFFERINGS

This section of the Announcement lists all undergraduate courses offered by the Faculty of Education in one or another of its many degree, diploma, or certificate programs.

Some courses will not be offered in 1976-77 and some will be available in the evenings only through the Centre for Continuing Education.

IMPORTANT: WHEN THIS LIST IS USED FOR THE PURPOSE OF COURSE SELECTION (ELECTIVES ETC.) REFERENCE MUST BE MADE TO THE **UNIVERSITY TIMETABLE GUIDE** OR, FOR EVENING COURSES, TO THE ANNOUNCEMENT OF THE **CENTRE FOR CONTINUING EDUCATION.** THOSE PUBLICATIONS PROVIDE THE NECESSARY INFORMATION ON COURSE SCHEDULES (SESSION, TIME, PLACE ETC.). FOR FURTHER ASSISTANCE CONSULT YOUR FACULTY ADVISOR.

EXPLANATORY NOTES

The information given below for each course includes the number and title by which it is identified, a short description of its content, its credit rating or weight and, if possible, the professor.

COURSE NUMBER — The first digits of the course number are used to designate the department or teaching unit from which the course originates. The code used is a follows:

411 —Education Administration
412 —Counsellor Education
413 —Social Foundations of Education
414 —Educational Psychology & Sociology
415 —Catholic Studies
417 —Education in Science
418 —Education in Home Economics
421 —Protestant Studies
422 —Jewish Studies
426 —Education in Art
427 —Education in English
428 —Education in Mathematics
429 —Education in Music
430 —Education in Social Sciences
431 —Education in Second Languages
432 —Educational Media
433 —Elementary Education
434 —Physical Education
435 —Student Teaching
436 —Technical — Vocational and Business Education
446 —Orientation
448 —B. Ed. Core Programs
449 —College Level Programs

The last three digits of the number are generally used to indicate the year during which the course is normally taken, the teaching area or level for which it is intended, and the nature of the course.

NOTE: In the University Timetable Guide, a letter suffix is added to each course number (v.g.411-394A) to indicate when a course is offered: A = Fall semester; B = Winter semester; D = beginning in Fall and continuing through Winter semester; C and/or L = Summer Session. Parentheses around the course number indicate such courses are pending approval.

CREDIT RATING

In degree programs the credits given for any course are a measure of the effort expected of the student during each week of a fifteen week period. The number of hours per week, inclusive of lectures, labs, personal study, etc., devoted to a course should normally be three times the number of credits specified.

COURSE WEIGHT

In the diploma and certificate programs a weight in hours is given to each course relative to the lectures each week during one or two terms.

EDUCATIONAL ELECTIVES

Courses which are available as ELECTIVES generally or recommended for particular programs are designated in the course list by a (†) placed beside the course number (for a list of recommended electives, see page 18.)

ACADEMIC COURSES

Courses offered by the Faculty of Education which, if appropriate to the student's program, may be included in the ACADEMIC CONCENTRATION are designated in the course list by a (*) placed beside the course number.

411 — Educational Administration

† **411-394 ADMINISTRATION OF EDUCATION IN QUEBEC.** An introduction to the system of administration and decision-making in the public schools of the province as these relate to teachers. Consideration will be given to staff relationships, the politics of education, finance and administrative roles at all levels of the system. 3 credits.

411—511 GENERAL ADMINISTRATIVE PRACTICE. An overview of the administrative practice and procedure in use in education today. Relevant theory to practice relationship will be explored. 6 credits.

411-530 ADMINISTRATION OF EDUCATION IN QUEBEC. A consideration of the system of education in Quebec. The focus will be on the basic legal framework of education in Quebec and the princi-

pal legal documents, and on the educational system in inter-action with other social systems and society as a whole. 3 credits.

411-542 CURRICULUM PLANNING IN PUBLIC EDUCATION. Study of the means for developing and implementing the school curriculum in education today. 3 credits.

411-544 RESOURCE UTILIZATION IN EDUCATION. A focus on the resources available to administrators, finances and the computer in day to day operations will be considered relative to Quebec today. 3 credits.

411-552 SCHOOL PERSONNEL PRACTICES. Present personnel practices and procedures relevant to the current Quebec scene. Emphasis on hiring, probation, supervision, dismissal and negotiations for education employees. 3 credits.

411-562 PLANNING FOR CHANGE IN PUBLIC EDUCATION. The political and social implications for administrative change in public education. The process and procedure for planned change in education. *(Not offered 1976-77). 3 credits.*

411-575 SECONDARY SCHOOL CURRICULUM. This course focuses on the development of high school curricula in specific fields and their relationship to the total school program. It attempts to bring into perspective the total school program and the individual learning experience. It considers problems arising in the administration of curriculum development and curriculum implementation. 3 hours, 1 term.

411-582 SOCIAL GROUPS IN ADMINISTRATION. The dynamics of the many groups affecting the education scene today; including Parent Committees, School Committees, School Boards, Public Action Groups and others. *(Not offered 1976-77).*3 credits.

411-592 SCHOOL LAW. Compulsory certification course to give prospective teachers an understanding of the framework of education in the Province of Quebec. 1 hour, 1 term.

412 — Counsellor Education

† **412-304 GROUP PROCESSES:** This course is intended to make the student familiar with group organization and operation as it relates to the schools. Interpretation of group interaction and typical roles played by members in groups. 3 credits. (Limited Enrolment).
Dr. Maroun, Dr. Harris

413 — Social Foundations of Education

413-204 INTRODUCTION TO EDUCATION. An overview of present day educational practices and policies with particular reference to the schools of Quebec; designed to provide the student with a personal frame of reference within which subsequent academic and professional studies preparatory to a teaching career may be effectively evaluated and pursued. 3 credits.

413-402 COMPARATIVE EDUCATION. A study and comparison of recent education developments in England, France, Germany, the Soviet Union, and the United States. 6 credits.
Dr. Lipkin

(413-403) **EDUCATION OF MINORITY GROUPS.** An examination of the education of minorities in Canada (with emphasis on Québec), in historical, sociological and psychological perspectives. Both immigrant groups and native people will be studied. This course includes a field component. 3 credits.

† **413-404 THE RISE OF PUBLIC EDUCATION IN THE 19TH CENTURY.** The impact of industrialism, nationalism and colonialism on the development of public education in Western society. 3 credits. *(Not offered 1976-77).*
Dr. Jobling

† **413-405 THE CRITICAL SPIRIT AND EDUCATION.** A study of contemporary social and educational criticism, and its impact on the teacher and the school. Readings may be drawn from among the works of Marcuse, Roszak, Toffler, Camus, Buber, Hutchins, Neatby et al. 3 credits.
Dr. Coccalis

† **413-406 INTRODUCTION TO COMPARATIVE EDUCATION.** Study of the dynamics of education in various societies throughout the world. The ideas and approaches of several disciplines are utilized in order to gain an understanding of educational systems and problems in comparative perspective. 3 credits.
Dr. Eisemon

† **413-407 EDUCATION AND SOCIETY IN QUEBEC.** A study of the relationship between education and society in Quebec from the 17th century to the present. Such topics as cultural dualism and education, church and education, modernization, are examined. 3 credits.
Dr. Jobling

† **413-408 HUMAN VALUES AND EDUCATION.** A study of selected works dealing with moral, religious, social, and political values with a view to determining their relevance to basic educational issues. 3 credits.
Professor Nemiroff

† **413-409 WOMEN AND EDUCATION.** This course explores the school as a sexist institution in both historical and contemporary perspectives; identifies women's contributions to intellectual history and the development of educational ideas and practices; analyzes problems such as those of prejudice in schools, women teachers and promotion, sex role stereotypes in texts. Interdisciplinary approach. Guest speakers. 3 credits.
Dr. Gillett

† **413-410 WOMEN IN HIGHER EDUCATION.** Examines the roots of prejudice against women in the ivy-covered halls of learning. Considers women's struggles for intellectual equality in historic and contemporary perspectives. Interdisciplinary approach. 3 credits.
Dr. Gillett

413-420 ISSUES IN EDUCATION. The examination of major educational issues against the background of the student's own field experiences. The relevant principles and findings of educational philosophy, history and psychology are treated. *(Not offered in 1976-77).* 3 credits.

413-500 FOUNDATION STUDIES IN EDUCATION. An examination of selected developments in the social foundations of modern education. 3 hours, 2 terms.
Staff

413-502 SOCIAL FOUNDATIONS OF EDUCATION (See 413-500D.) 3 hours, 1 term.
Staff

414 — Educational Psychology and Sociology

† **414-201 THE NATURE AND CONDITIONS OF SCHOOL LEARNING.** Learning and behaviour. Maturation and Learning. Classical conditioning and its adequacy as a model for classroom teaching. Operant conditioning and basic learning processes. Verbal learning and concept formation. Remembering and forgetting. Transfer of learning and problem solving. 3 credits.
Professors Birch & Groen

† **414-203 EDUCATION AND SOCIETY.** This course focuses broadly on education, dealing with the functions of different levels of education in societies at various stages of development, and emphasizing present-day Quebec and Canadian society. The sources of support for public education, the controls imposed upon educators, and the relationship of education to the occupational structure are analysed. Educational opportunity and social mobility in an industrial society, and the impact of social stratification on educational policies are discussed. 3 credits.
Professor Pinto

414-204 A GENERAL INTRODUCTION TO PSYCHOLOGY FOR TEACHERS. This course is designed for students who have had little or no previous psychology. Topics dealt with are those considered most likely to be useful for an understanding of other courses in Educational Psychology offered by the Department. The course will deal with Learning, Intelligence, Motivation, and Personality. 3 credits. *(Not offered 1976-77).*

† **414-205 SOCIOLOGY OF EDUCATION — AN OVERVIEW.** An introductory course, designed to present students with a broad sociological perspective from which to view education and to provide background for subsequent courses in the sociology of education. Topics will include the role of education as an institution in society, the school as a social system, the role of educational personnel and the influence of social variables such as race, sex, ethnicity, and socio-economic status on teaching and learning. *(Includes a field experience component.)* 3 credits.
Professor Pinto

† **414-208 THE DEVELOPMENT OF PERSONALITY AND SOCIAL BEHAVIOUR IN THE SCHOOL-AGE CHILD.** This course will deal with personality, social behaviour, and moral development from nursery school up to but not including adolescence. The emphasis will be on aspects of personal and social development that are related to the process of schooling with attention to teacher attitudes and practices in dealing with the problems of children. *(Includes a field experience component)* 3 credits. *(This course is offered in both semesters. In the first semester enrolment is limited to twenty-five students.)*
Professor McKay

414-214 CHILD DEVELOPMENT. The social, emotional, psychological and intellectual growth and development of the young child; guided observation of children; seminars; reports; individual readings. *(Not offered 1976-77).* 6 credits.

414-240 CRAFT COURSE. A workshop approach intended to show how learning and behaviour may be helped by skills developed through craft work; includes use of wood, leather, metals and ceramics as well as demonstrating how to improvise with commonplace materials. This course is usually taken in Phase 1. Valid for Diploma in Special Education only. (No credit.)

† **414-249 CREATIVITY AND ITS CULTIVATION.** Survey of recent research and theory concerning creativity, with special attention to creativity in school-age children; treats problems of defining and assessing creativity, the relationship between creativity and intelligence, the nature of the creative process and personality and creative behaviour. Methods of enhancing creativity will be examined, emphasizing ways of facilitating creativity in a

school setting. *(Includes a field experience component.)* 3 credits.

Professor Rejskind

414-260 INTRODUCTION TO EDUCATIONAL PSYCHOLOGY (SECONDARY LEVEL). An introduction to how concepts and principles from contemporary research and theory may be applied in the classroom. This course aims to answer the question, How do secondary pupils within the "normal" range of abilities and circumstances best acquire the skills and content that the schools impart? Measurement and evaluation by teachers and classroom discipline are also considered. 3 credits.

414-300 THE SCHOOL AS AN ORGANIZATION. Structures and functions of schools at various levels. Pre-school to university, and in various segments of society; relationships of schools as organizations to other organizations; school size, complexity of organizational structure; authority patterns, and modes of compliance related to teaching and learning; career patterns in education and patterns of interactions among school personnel. 3 credits. (Prerequisite: 414-203 or 414-205.) *(Not offered 1976-77).*

† **414-304 MEASUREMENT AND EVALUATION IN EDUCATION.** The purposes of examinations. Causes of complaints about examinations. Equalizing means and dispersions in distribution of marks. Standardized scores. The percentile system. Essay and objective-type examinations. Taxonomies of educational objectives. Validity and reliability: item analysis. 3 credits.
Professor Gougeon

† **414-305 NON-VERBAL COMMUNICATION.** An introductory course dealing with non-verbal aspects of behaviour and its interpretation. It will deal also with non-verbal communication in young children and children without speech. Some consideration will be given to the cognition of behaviour acts from drawings, cartoons, and illustrative gestures. 3 credits. (Enrolment is limited to twenty-five students)
Professor Edwards

† **414-308 SOCIOLOGY OF THE CLASSROOM.** The classroom as a social system; school or class climate as it influences the learner. The socialization process; social class, racial and ethnic variations in socialization styles. Influences on learning of teacher on child's self-concept and subsequent results in terms of achievement, level of aspiration, and social mobility. *(Includes a field experience component).* 3 credits. *(Pre-requisites: 414-203 or 414-205 or an introductory course in Sociology).*
† **Professor Pinto**

(414-310) COMPUTER APPLICATIONS IN EDUCATION. The course will be non-mathematical in nature and will deal with such topics as recent developments in computer-assisted instruction, computer-assisted testing, and computer-managed instruction. The results of recent research and their field applications will be considered. 3 credits.
Professor Cartwright

414-314 DEVELOPMENTAL TESTING OF YOUNG CHILDREN. Guided observation of children with emphasis on developmental testing. Lectures, demonstrations and testing practicum. *(Not offered 1976-77).* 3 credits. (Prerequisite: 414-214.)

† **414-340 EDUCATION OF EXCEPTIONAL CHILDREN.** Introduction to the education of exceptional children; characteristics, classification, needs of exceptional children; developmental and corrective programs; areas of current research. *(Includes a field experience component).* 3 credits. (The course includes two hours of lectures and four hours of field work — one morning or afternoon per week. Enrolment is limited to thirty students, depending on the number of field experience situations available in schools).
Professor Wilkinson.

† **414-341 GENERAL METHODS IN SPECIAL EDUCATION.** Class organization, teaching methods, assessments of educational level, setting objectives, grouping, individual programming, and reporting *(Includes a field experience component).* 3 credits. (Enrolment is limited to twenty students).
Miss Norton.

414-342 ORGANIZATION OF SPECIAL EDUCATION PROGRAMS. Needs of EMR, slow-learning and emotionally disturbed children: characteristics, school programs, evaluation of progress; integration into the community. 3 credits.
Professor Stutt

† **414-343 INTRODUCTION TO DIAGNOSIS AND ASSESSMENT.** Principles and procedures in the evaluation of pupil growth and achievement. Emphasis on the use and interpretation of tests to be given by the class teacher. 3 credits.
Professor Pupo

414-344 PRACTICUM IN DIAGNOSIS AND ASSESSMENT OF LEARNING PROBLEMS. A supervised practicum in the use of various tests and measures in learning problems of children; developing prescriptive teaching programs. 3 credits. (Prerequisite: 414-343.)
Professor Sokolyk

† **414-346 TALENTED AND GIFTED STUDENTS.** The psychology and education of exceptionally able children. Definitions, assessment, types of programs and goals, and teacher requirements. The course combines theoretical background and practical concerns. *(Includes a field experience component.)* 3 credits.
Professor Shore

† **414-377 ADOLESCENCE AND THE PROCESS OF EDUCATION.** Development of personality and social behaviour in adolescence. Problems relating to self-concept, academic achievement, relationships with others, and development of values in a changing culture. Some attention to current criticisms of the school as an agency involved in adolescent development. *(This course includes an optional field experience component which will fulfill that requirement for U2 Secondary B.Ed. students, but is also available to others.)* 3 credits.
Professors Mager & Pupo

† **414-394 COGNITIVE DEVELOPMENT IN THE SCHOOL-AGE CHILD AND ADOLESCENT.** The major orientation of the course will be around Piaget's theory of intellectual development and its relevance for the school, although the work of others in the field will also be considered. (This course should be seen as a complement to either 414-208, The Development of Personality and Social Behaviour in the School-age Child, or 414-377, Adolescence and the Process of Education). *(Includes a field experience component).* 3 credits
Professor Hanrahan

† **414-396 THE NATURE OF INTELLIGENCE.** The nature, development and measurement of intelligence in a school setting. Intelligence and learning; creativity and intelligence; intelligence and cultural deprivation. The role of the school in developing intelligence. 3 credits.
Professor Birch

414-440 COGNITIVE AND PSYCHOMOTOR PROBLEMS OF EXCEPTIONAL CHILDREN. Teaching methods appropriate to individual and small group instruction to overcome a variety of learning problems. Emphasis on perceptual difficulties. (Pre-requisite 414-341.) 3 credits.

† **414-441 BEHAVIOURAL PROBLEMS OF EXCEPTIONAL CHILDREN.** Teaching methods appropriate to the needs of pupils with emotional and behaviour problems. Methods presented will include behaviour modification techniques. 3 credits.
Professor Mager

414-442 PSYCHOLOGY OF LEARNING PROBLEMS. The Learning Process; personality development, perceptual dysfunction, behaviour disorders and other handicapping conditions related to learning. 3 credits.

414-443 SCHOOL-HOME-COMMUNITY RELATIONS IN SPECIAL EDUCATION. Influence of home and community on the child, teacher-parent interviews, reporting, co-operation with hospital clinics, other professionals, etc. 3 credits.

414-444 MATERIALS IN SPECIAL EDUCATION. A critical examination of materials available for special educational programs, commercial and teacher-made materials; the application of A-V techniques to Special Education. 3 credits.

414-445 VOCATIONAL HABILITATION OF EXCEPTIONAL CHILDREN. Vocational requirements of non-academic children, vocational preparation as a responsibility of the special class teacher, placement services, follow-up. 3 credits.

414-446 SPECIAL TOPICS IN THE EDUCATION OF EXCEPTIONAL CHILDREN. A seminar or workshop approach to selected topics in the field of Special Education. Examples of possible topics include Language Development, Educable Retarded Adolescents, and Behaviour Modification. 3 credits.

† **414-456 APPLICATION OF PSYCHOLOGICAL PRINCIPLES TO EDUCATIONAL PROBLEMS.** Major problems in education and instruction and review of related psychological research findings which bear on these issues. Students will investigate literature and design and *conduct an experiment* related to one of the following areas: (1) Individual Student Differences; (2) Social Aspects of Education; (3) Programmed Learning; (4) Design and Evaluation of Learning Environments and (5) Classroom Management. *(Includes a field experience component).* 3 credits. (Pre-requisites: This course has a limited enrolment and permission of the instructor is required.)
Professor Geis

† **414-492 PSYCHOLOGY AND INSTRUCTIONAL DESIGN.** This course draws on the fields of learning theory, developmental psychology, and measurement to focus on the tasks of constructing instructional materials. Areas to be considered include behaviour analysis, concept formation, and test construction. *(Includes a field experience component).* 3 credits.

† **414-495 SEMINAR IN SPECIAL TOPICS.** The content of the seminar will vary from year to year and will be announced prior to registration. The seminar may be given by a single instructor or by a group, as the occasion warrants. Among the seminars to be offered in 1976-77 will be Psychological Aspects of Mathematical Problem Solving (Professor Groen) 3 credits. (Permission must be obtained from the department before registration).

† **414-496 INDIVIDUAL READING COURSE.** By arrangement with individual instructor. Permission must be obtained from the Department before registration. 3 credits.

414-500 EDUCATIONAL PSYCHOLOGY. This course is offered in separate sections for future elementary and secondary teachers in the 1G program.

415 — Catholic Studies

* **415-200 GOD AND MAN IN DIALOGUE.** An exploration of "Relevation" (especially as conceived by the Second Vatican Council) with particular concern for man's responsibility within the revelational process today. 3 credits.
Professor Jeffery

* **415-204 MAN BEFORE REALITY.** An exploration of the real in its being and its becoming, in its principles and its causes, in its unity and its diversity, in its truth and its goodness. 3 credits.
Professor Pinto

* **415-205 PHILOSOPHY OF RELIGION.** An investigation of the meaning of Religion and its relevance to our age. A study of the basic truths which enable men and women of every age to relate themselves to the Supreme Being and thus achieve complete self-realization. 3 credits.
Professor Jeffery

* **415-206 THE CHRUCH AND THE FUTURE.** What does it mean "to be Church" at a time when new styles of consciousness and new world views are advocated. 3 credits. (Not offered 1976-77).
Professor Lawlor

* **415-207 WHO IS CHRIST?** An open search for the authentic person of Christ — from Scriptures and present day manifestations. 3 credits.
Professor Francoeur

* **415-208 IN SEARCH OF MAN.** An exploration of man's place in the world; his role as a knower; his dynamic responses to his environment; his ultimate nature as a human person. 3 credits.
Professor Jeffery

* **415-209 THE SEARCH FOR AUTHENTICITY.** An exploration of contemporary man's search for himself and his God as reflected in the lives and writings of such persons as: Daniel Berrigan, Mohandas Gandhi, Hermann Hesse, and Elie Wiesel. 3 credits. (Not offered 1976-77).
Professor Lawlor

* **415-290 GUIDE TO READING THE BIBLE.** A basic introduction to the Judaeo-Christian Scriptures with the emphasis upon reading and existential interpretation. 3 credits.
Professor Hilton

415-291 OBSERVATION AND FAMILIARIZATION. Observation, individual tutoring, and small group work in a secondary or elementary school environment. (Student activity to approximate 10 days in school setting; arrangements by Student Teaching Office in consultation with adviser). 1 credit.

415-341 RELIGIOUS RESPONSE IN THE ELEMENTARY SCHOOL. In harmony with the discoveries of developmental religious and moral phases in the life of the elementary school child, this course explores developing programs and procedures in the elementary school. 3 credits.
Professor Francoeur

* **415-391 A THEOLOGY OF PROCLAMATION.** Man's responsibility and involvement in realizing the Divine Plan; how God chooses to depend upon man for the growth of His People towards Him. 3 credits.
Professor Jeffery

415-392 GUIDING THE RELIGIOUS RESPONSE — SECONDARY. An introduction to the science of the guidance of young people through the slow developmental patterns of grasping life's meaning and of directing their lives in consequence. Attention is given to the importance of the teacher's own self-image. 3 credits.
Professor Jeffery

* **415-394 PHILOSOPHY OF GOD.** Starting with man's experience of being, an exploration of fundamental truths concerning the existence and the nature of God. The study draws extensively upon the thought of Thomas Aquinas and considers such basic issues as freedom and evil in relation to the knowledge and goodness of God. 3 credits.
Professor Pinto

* **415-395 CHRISTIAN VALUES AND HUMAN ACTION.** A philosophical critical inquiry into the relationship between belief and conduct oriented towards the teacher and his role in moral education. Investigation of the ethical nature of the human act and the natural laws as the basis for morality. 3 credits.
Professor Pinto

* **415-396 SEMINAR IN CONTEMPORARY THEOLOGY I.** A reading seminar course in which current theological problems are discussed. Specific topics may differ from year to year. 3 credits.

* **415-397 VARIETIES OF CHRISTIAN WITNESS.** An exploration of divergent paths of Christian Witness as exemplified in the lives and writings of Thomas Merton, contemplative-critic, and Teihard de Chardin, philosopher-scientist. 3 credits. (Not offered 1976-77).

† **415-398 PHILOSOPHY OF CATHOLIC EDUCATION.** An exploration of the philosophy of Catholic education, and its relevance in the world today. *(Will include a field experience component).* 3 credits.

415-399 THE CATHOLIC SCHOOL OF THE FUTURE. A projection into the future — new models for Catholic schools in the Province of Quebec; a consideration of the identity of the Catholic school, the Protestant school, and the Neutral school of the future, in relation to the expectations of parents, students, teachers, and the larger community. 3 credits. *(Not offered 1976-77)*

415-490 SPECIAL PROJECT. An independent undertaking requiring the preparation, execution, and retrospective analysis of a project focussed on practical activities in a school setting. 2 credits. *(Not offered 1976-77)*

* **415-491 CATECHETICAL THEMES.** Following upon exploration of the basics of guiding the Religious Response, the student is afforded the opportunity of enriching his background by exploring great catechetical themes in the light of the newest theological insights. 3 credits. (Prerequisite: 415-341 or 415-392.)

* **415-494 ETHICS IN PRACTICE.** Fundamental principles of ethics are applied to specific moral issues. The questions investigated are topics which form a part of or are related to the high school religion curriculum, or which are of particular concern to the high school student today: abortion; drugs; protests; education; nuclear war; disarmament and the like. 3 credits. (Prerequisite: 415-395.)
Professor Pinto

* **415-495 THE EUCHARIST.** Biblical concepts of covenant and covenant rites, especially of shared blood and shared food, studies in relation to significance of the Last Supper; Christ as covenant; Eucharist as covenant meal and its meaning in the modern context. 3 credits.

415-503 RELIGIOUS RESPONSE IN THE SECONDARY SCHOOL — AN ADVANCED STUDY. This course aims to examine in depth those programs currently under experimentation in our high schools. Serious study is to be made of adolescent religious response and those techniques, attitudes and personal approaches that may best enable the teacher to guide this response. 3 hours.
Professor Francoeur

415-547 RELIGIOUS RESPONSE IN THE ELEMENTARY SCHOOL. Exploration of the content and direction of moral and religious guidance in the elementary school. Emphasis is placed on the development needs of the child. 2 hours.
Professor Francoeur

415-571 RELIGIOUS RESPONSE IN THE SECONDARY SCHOOL. A study of the scope and procedures of the psycho-pedagogy of religious response for secondary school students intended for those planning to specialize in moral and religious education at the secondary school level. 3 hours.
Professor Francoeur

415-573 LIVING WITH INSIGHT. Examination of the shaping of contemporary living in the light of the gospel demands. The starting point will be man's experience in today's realities. 3 hours, 1 term.
Professor Jeffery

415-594 PHILOSOPHY OF CATHOLIC EDUCATION. An exploration of the philosophy of Catholic education, its relation to other philosophical systems, and its relevance in the world today. 3 hours, 1 term.

415-595 PHILOSOPHY OF CATHOLIC EDUCATION. An exploration of the philosophy of Catholic education and its relevance in the world today. Some areas to be considered are: contemporary understandings of traditional beliefs, values-education, objectives of Catholic schools. 3 hours, 2 terms.

417 — Education in Science

* **417-241 BACKGROUND SCIENCE FOR ELEMENTARY SCHOOL TEACHERS.** This course presents science as a means of exploring and explaining our environment. A study of some of the fundamental concepts common to most elementary programs — an elective. Not open to students with CEGEP Science. Limited enrolment. 3 credits.
Professors Wolfe and Hutton

417-291 OBSERVATION AND FAMILIARIZATION. Observation, individual tutoring, and small group work in a secondary or elementary school environment. (Student activity to approximate 10 days in school setting; arrangements by Student Teaching Office in consultation with adviser). 1 credit.

417-312 PRIMARY SCIENCE. Methods of providing children at the nursery school and kindergarten levels with useful learning experiences related to their natural environment. Restricted enrolment. 3 credits.
Professor Wolfe

417-372 SECONDARY SCIENCE CURRICULUM AND INSTRUCTION. This course relates to directed observations in secondary schools and includes the study of general objectives, curriculum trends, and the planning of teaching strategies and pupil experiences needed to promote the learning of the skills, concepts and processes of science. Prerequisite: A minimum of 18 credits in post-secondary science. 3 credits.
Professor Hutton

417-405 ECOLOGICAL FEATURES OF OUR NATURAL ENVIRONMENT. A lecture, laboratory and field course to train elementary school teachers in the principles and practices of field biology and nature tours. The observation and identification of various organisms and a study of their ecological relationships in the web of life. Field trips. Limited enrolment. 3 credits.

417-406 ECOLOGICAL PROBLEMS IN OUR ENVIRONMENT. A modern study of environmental problems designed for elementary school teachers. The role of man in the web of life in relation to conservation, the population explosion, waste disposal, sewage treatment, air and water pollution, chemical

and radiation pollution. Restricted enrolment. 3 credits.

417-442 CURRICULUM AND INSTRUCTION IN ELEMENTARY SCIENCE. A survey of modern curricula and teaching strategies in use at the elementary school levels and the design of suitable exploratory activities using simple equipment to give children some appreciation of the nature of science. Limited enrolment. 3 credits.
Professor Wolfe

417-443 PERSPECTIVES ON ELEMENTARY SCIENCE EDUCATION. A course to provide a deeper perspective of modern elementary science education through a study of the active learning approach, modern elementary science projects and research — an elective. 3 credits. (Prerequisite: 417-442 or equivalent)

417-490 SPECIAL PROJECT. An independent undertaking requiring the preparation, execution, and retrospective analysis of a project focussed on practical activities in a school setting. 2 credits. *(Not offered 1976-77).*

417-522 SCIENCE CURRICULUM AND INSTRUCTION — EARLY CHILDHOOD. A materials-centered workshop approach to teaching science to young children. Emphasis is on design of teaching aids and application to pupil-oriented activities in the elementary classroom. 2 hours, 1 term.
Professor Wolfe

417-532 SCIENCE CURRICULUM AND INSTRUCTION — LATER CHILDHOOD. A materials-centered workshop approach to teaching science to the older elementary school child. Emphasis is on design of teaching aids and application of pupil-oriented activities in the classroom. 2 hours, 1 term.

417-575 GENERAL SCIENCE CURRICULUM AND INSTRUCTION — SECONDARY SCHOOL. Principles and procedures for implementation of the general science curriculum in the secondary schools of Quebec. A survey of teaching methods and laboratory management appropriate to the junior high school level. 3 hours, 2 terms.
Professor Hutton

417-576 BIOLOGY CURRICULUM AND INSTRUCTION — SECONDARY SCHOOL. A survey of curricula and teaching methods in biology at the secondary level, and the design of a modern laboratory program. 3 hours, 2 terms.
Professor Searles

417-577 CHEMISTRY CURRICULUM AND INSTRUCTION — SECONDARY SCHOOL. A study of teaching strategies, philosophy and objectives of science education in chemistry at the secondary level, with special emphasis on recently developed curriculum projects. Establishment and maintenance of a chemistry laboratory. 3 hours, 2 terms.

417-578 PHYSICS CURRICULUM AND INSTRUCTION — SECONDARY SCHOOL. A survey of curricula and teaching methods in Physics at the secondary level, and the design of a modern laboratory program. 3 hours, 2 terms.
Professor Landry

418 — Education in Home Economics

418-472 CURRICULUM AND INSTRUCTION IN HOME ECONOMICS. The nature and purpose of the high school curriculum in Home Economics; knowledge and practical experience of the various techniques of teaching in all areas of that curriculum. 3 hours, 1 term.
Professor A. Smith

418-473 CURRICULUM AND INSTRUCTION IN HOME ECONOMICS. A study of various types of instructional areas for Home Economics; necessary equipment; planning of budgets and keeping of records, examination of and practice in preparing evaluation and measurement devices. 3 hours, 1 term.
Professor A. Smith

418-474 ADVANCED STUDY IN HOME ECONOMICS C & 1. A seminar course to provide in depth study in areas of the Home Economics Curriculum and Instruction selected to suit interests of the students. 3 hours, 1 term. (Prerequisite(s): 418-472 and approval of instructor.)
Professor A. Smith

421 — Protestant Studies

421-291 OBSERVATION AND FAMILIARIZATION. Observation, individual tutoring, and small group work in a secondary or elementary school environment. (Student activity to approximate 10 days in school setting; arrangements by Student Teaching Office in consultation with adviser). 1 credit.

* **421-301 LIVING WITH QUESTIONS.** A survey of Old and New Testament literature together with current ethical and philosophical questions which arise out of such study and which confront teachers in modern society. 3 credits.
Professor MacNeill

421-342 — 421-542 HUMAN AND RELIGIOUS VALUES IN THE ELEMENTARY SCHOOL. Living together in the modern world raises problems of behaviour and belief. This course explores ways in which teachers may help children in elementary school to appreciate each other's traditions and values and to realize their own identity within their own life circumstances. 3 hours, 1 term.
Professor MacNeill

421-372 HUMAN AND RELIGIOUS VALUES IN THE SECONDARY SCHOOL. How can children discern value within the flux of experience? By what means can they develop value systems that are increasingly their own and increasingly mature? Through discussion and through examination of materials, students will attempt to increase their understanding of moral and spiritual development. 3 hours, 1 term.
Professor MacNeill

421-490 SPECIAL PROJECT. An independent undertaking requiring the preparation, execution, and retrospective analysis of a project focussed on practical activities in a school setting. 2 credits. *(Not offered 1976-77).*

421-572 HUMAN AND RELIGIOUS VALUES. How can children discern value within the flux of experience? By what means can they develop value systems that are increasingly their own and increasingly mature? Through discussion and through examinations of materials, students will attempt to increase their understanding of moral and spiritual development. 6 hours.
Professor MacNeill.

422 — Jewish Studies

422-400 TEACHING CUSTOMS AND CEREMONIES. An exposure to all facets of Jewish practices, life cycle, calendar cycle, prayer, etc. Methods of applying this material to the Jewish Classroom. 3 credits. (Prerequisite: permission of instructor.) Sessions will be conducted in Hebrew.
Professor August

422-401 TEACHING BIBLICAL LITERATURE I. A survey of the narrative portion of the Pentateuch with a view to teaching this material in Jewish schools. An examination of some of the techniques presently being developed in Bible teaching. 3 credits. (Prerequisite: permission of instructor.) Sessions will be conducted in Hebrew.
Professor Rosenblatt

422-402 TEACHING BIBLICAL LITERATURE II. A survey of selected material in Prophets and Writings with a view to teaching this material in Jewish schools. An examination of some of the techniques presently being developed as they relate to Prophets and Writings. 3 credits. (Prerequisite: permission of instructor.) Sessions will be conducted in Hebrew.
Professor Rosenblatt

422-404 TEACHING HEBREW/YIDDISH — SECOND LANGUAGE. A study of the most up-to-date methods and theories related to the teaching of Hebrew and Yiddish as a second language in both day schools and supplementary settings. 3 credits. (Prerequisite: permission of instructor.) Sessions will be conducted in Hebrew.
Professor Shafir

426 — Education in Art

* **426-204 DRAWING.** Development of sound draughtmanship through the study of organic forms and the human figure in various media. 3 credits.
Professors Tondino & Papke

* **426-205 PAINTING II.** Investigation of color, media, tools, techniques. Studies of natural forms, the human figure. 3 credits. (Prerequisite: 204).
Professor Tondino

* **426-206 GRAPHICS I.** An introduction to some graphic media, monoprints, collagraphy, linocuts, woodcuts, etc. A practical study of the various elementary processes. Exhibition of student work required at end of term. 3 credits.
Professor B. White

* **426-207 GRAPHICS II.** Study in further graphic media techniques. These may include line engraving, dry point relief etching, intaglio and related processes. 3 credits. (Prerequisite: 426-206.)
Professor B. White

* **426-208 CERAMICS I.** A consciousness of the medium is developed through basic ceramic processes: hand building experiences and introduction to wheel thrown construction. 3 credits.
Professor Studham

* **426-209 CERAMICS II.** A continuation and concentration of wheel projects. Elementary clay and glaze preparations. 3 credits. (Prerequisite: 208.)
Professor Studham

426-212 ART FOR KINDERGARTEN TEACHERS. Exploration of a variety of art media suitable for the kindergarten child; relationships of line, colour and texture; development of manipulative skills and the child's perceptual awareness of his environment. 3 credits. (Prerequisite: 426-241.)

* **426-241 BASIC ART MEDIA.** A course to acquaint the student with basic art media in two and three dimensions and to provide for involvement and in-depth experience in the creative process. This course, or equivalent, is a Prerequisite for Art Methods in elementary schools. 3 credits.
Staff

426-291 OBSERVATION AND FAMILIARIZATION. Observation, individual tutoring, and small group work in a secondary or elementary school environment. (Student activity to approximate 10 days in school setting; arrangements by Student Teaching Office in consultation with adviser) 1 credit.

* **426-296 BASIC DESIGN.** Exploration of the basic elements of visual art through two dimensional composition and three-dimensional constructions.

Investigation of materials and tools and the processes of manipulating and relating materials. 3 credits.
Professors Watling & Tondino

* **426-297 DESIGN II.** Further rendering of two- and three-dimensional compositions (296) investigating the potential of basic geometric and organic forms, spatial relationships and environment. 3 credits. (Continuation of prerequisite 296.)
Professor Watling

* **426-298 APPLIED DESIGN.** A study of historical stages of furniture and interior design through lectures, museum studies, field trips, assignments both written and practical. Designed for H.Ec. students. 3 credits.
Professor Jaques

* **426-300 CERAMICS III: GLAZES.** Chemistry of glazes, formation of slips, engobes and glaze. Firing and maintenance of kiln and equipment. 3 credits. (Prerequisite: 209.)
Professor Studham

* **426-304 PAINTING III.** Continuation of course 205 with emphasis on drawing and structure.
Professor Tondino

* **426-305 PAINTING IV.** Continuation of course 304 with emphasis on advanced composition.
Professor Tondino

* **426-309 CERAMICS IV.** Chemistry of glazes. Emphasis placed on lab work. Firing and maintenance of kiln and equipment. 3 credits. (Prerequisite: 426-300.)
Professor Studham

426-322 ART CURRICULUM AND INSTRUCTION — EARLY CHILDHOOD. The philosophy and psychology of child art. The teacher's role in the development of the child's visual awareness and creativity. 3 credits. (Prerequisite: 426-241 or equivalent).
Professors Benjamin & Jacques

426-332 ART CURRICULUM AND INSTRUCTION — LATER CHILDHOOD. To prepare teachers to understand and guide the visual art of children from nine to twelve years of age. 3 credits. (Prerequisite: 426-241 or equivalent.)
Professors Watling & Papka

* **426-342 ART CURRICULUM AND INSTRUCTION FOR ELEMENTARY SCHOOL ART MAJORS.** Psychology and philosophy of child art; reading and written assignments, techniques of teaching and program planning. 3 credits.
Professor Jaques

* **426-394 GRAPHICS III.** Continuation of studies of graphic techniques. These may include variations of previously learned techniques, silk screen, viscosity printing, multiple plate work, etc. 3 credits. (Prerequisite: 426-207.)
Professor B. White

* **426-395 GRAPHICS IV.** Advanced studies in various graphic media. The student will be expected to be familiar with standard processes studied in the preceding courses. At this stage the student should begin to concentrate on developing a personal style, incorporating the necessary techniques to make his personal statement. 3 credits. (Prerequisite: 426-394.)
Professor B. White

* **426-396 DESIGN III.** Application of learning and skills to more sophisticated problems of design. Consideration of design in relation to practical aspects of visual communication. 3 credits. (Prerequisite: 426-297.)
Professor Watling

* **426-397 DESIGN IV.** Advanced work in the development of perception and aesthetic presentation. Through projects and assignments students will be encouraged to pursue problems of design pertinent to their own interests, 3 credits. (Prerequisite: 426-396.)
Professor Watling

* **426-398 EARLY CANADIAN ART.** The visual environment, European sources and influences as revealed through a comprehensive survey of architecture, painting and applied arts from 1600 to 1867, through lectures, field trips, visual and written assignments.
Professor Papke

* **426-399 CANADIAN ART II.** The growth of Canadian art as evidenced through the changing visual environment from 1867 to the present, through lectures, field trips, visual and written assignments. 3 credits. (Prerequisite: 426-398.) May not be used as a prerequisite for Methods.
Professor Papke

* **426-404 PAINTING V.** Major problems in graphic expression. A tutorial course where the student selects his instructor. Individual conferences and criticism leads the student to an independent approach to painting. 3 credits. (Prerequisite: 305.)
Professors Tonino & Watling

* **426-405 PAINTING VI.** The student will be required to work in a variety of sizes up to mural painting. Exploration of selected media and new dimensions of design. 3 credits. (Prerequisite: 404.)
Professors Tonino & Watling

* **426-408 CERAMICS V.** Advanced work in ceramics, exploration of individual problems in given medium on glaze enamelling and lustreware. 3 credits. (Prerequisite: 426-309.)
Professor Studham

* **426-409 CERAMICS VI.** Continuation of exploration of individual problems working all known media. 3 credits. (Prerequisite: 426-408.)
Professor Studham

426-473 ART CURRICULUM AND INSTRUCTION — SECONDARY SCHOOL. A preparatory course for teaching Art in the secondary school. A study of the problems and needs of the pupil and

the development of art programs suitable for the adolescent. Course is integrated with field experience. (Prerequisite: 426-342 and Teaching in elementary schools). 3 credits.
Professor Jaques and Staff

426-490 SPECIAL PROJECT. An independent undertaking requiring the preparation, execution, and retrospective analysis of a project focussed on practical activities in a school setting. 2 credits. *(Not offered 1976-77)*

* **426-494 GRAPHICS V.** An extension of skills learned in Graphics I-IV. Techniques explored may include engraving, silk screen, relief etching, intaglio, collagraphy, dry point, combinations of printing techniques. The student will be expected to explore those areas which most closely correspond to his particular graphics style. 3 credits. (Prerequisite: 426-394.)
Professor B. White

* **426-495 GRAPHICS VI.** A further extension of skills learned in Graphics V. The student is expected to have mastered basic graphic skills and be able to work independently. A competent development of personal style, experimentation with, and control over the chosen medium is expected. 3 credits.
Professor B. White

* **426-496 SCULPTURE I.** Designed for students individually to encourage and develop personal aptitudes; major problems of three-dimensional design in new and/or traditional materials. 3 credits. (Prerequisite: 426-297.)
Professor Jones

* **426-497 SCULPTURE II.** Continuation of Sculpture I. 3 credits.
Professor Jones

* **426-498 SCULPTURE III.** More advanced techniques in modelling and casting, greater emphasis on considerations of the total concept and aesthetic qualities of the work. Introduction of wood sculpture and other materials. (Prerequisite 426-497.)
Professor Jones

* **426-499 SCULPTURE IV.** Advanced techniques in sculpture, wood sculpture, polyester resins and experimental work with new materials.
Professor Jones

426-522 ART CURRICULUM AND INSTRUCTION — EARLY CHILDHOOD. A study of child art and the teacher's role in the art program of the primary grades — written and practical assignments related to classroom activities. 2 hours, 1 term.
Professors Benjamin & Jacques

426-532 ART CURRICULUM AND INSTRUCTION — LATER CHILDHOOD. A study of child art closely related to the work in the classroom. Activities in two and three dimensions acquaint the student with media and techniques suitable for children in the senior grades of elementary school. 2 hours, 1 term.
Professors Benjamin & Watling

426-572 ART CURRICULUM AND INSTRUCTION — SECONDARY SCHOOL. Program development, techniques and problems of teaching art in the secondary school. Work closely related to field experience and to the problems of the developing young pupil. 3 hours, 2 terms. (Prerequisites: B.F.A. or equivalent. Interview and presentation of work.)
Professor Studham

426-573 ART CURRICULUM AND INSTRUCTION — ADVANCED — SECONDARY SCHOOL. An examination of the relationship of the visual arts to the secondary school curriculum and the development of the adolescent personality. 3 hours, 1 term. (Prerequisite: Must be registered in 572.)
Professor Jaques

NOTE: For other courses in Art History, see **Faculty of Arts Announcement.**

427 — Education in English

427-221 READING & LANGUAGE ARTS CURRICULUM AND INSTRUCTION (EARLY CHILDHOOD) PART I. An examination of current theories and practices related to the speaking and writing aspects of communication. Resource materials and aids to teaching and evaluation relevant to the primary level will be discussed. 3 credits.

427-222 READING & LANGUAGE ARTS CURRICULUM AND INSTRUCTION (EARLY CHILDHOOD) PART II. An examination of current theories and practices related to the Reading and Listening aspects of communication. Resource materials and aids to teaching and evaluation relevant to the primary level will be discussed. 3 credits.

427-223 READING INSTRUCTION — EARLY CHILDHOOD. Methods and materials for the teaching of reading in the primary grades. 3 credits.

427-224 CORRECTIVE READING INSTRUCTION — EARLY CHILDHOOD. Reading problems at a readiness and basic decoding level presented in a practicum format covering classroom diagnosis and remediation. 3 credits.

427-231 READING & LANGUAGE ARTS CURRICULUM AND INSTRUCTION (LATER CHILDHOOD) PART I. An examination of current theories and practices related to the listening and reading aspects of communication. Resource materials and aids to teaching and evaluation relevant to the intermediate and upper elementary levels will be discussed. 3 credits.

427-232 READING AND LANGUAGE ARTS CURRICULUM AND INSTRUCTION (LATER CHILDHOOD) PART II. An examination of current theories and practices related to the speaking and writing aspects of communication. Resource materials and aids to teaching and evaluation relevant to the intermediate and upper elementary levels will be discussed. 3 credits.

427-233 READING INSTRUCTION — LATER CHILDHOOD. Methods and materials for the teaching of reading in the upper elementary grades. 3 credits.

427-234 CORRECTIVE READING INSTRUCTION — LATER CHILDHOOD. Reading problems beyond the readiness and basic decoding level presented in a practicum format covering classroom diagnosis and remediation. 3 credits.

427-291 OBSERVATION AND FAMILIARIZATION. Observation, individual tutoring, and small group work in a secondary or elementary school environment. (Student activity to approximate 10 days in school setting; arrangements by Student Teaching Office in consultation with adviser. (1 credit).

†* **427-305 EXPERIENCES IN COMMUNICATIONS.** Personal development of students as communicators; involvement of the imagination in individual and group projects in language and in another chosen medium of communication; analysis of experiences in projects in relation to general problems of communication. Limited enrolment 3 credits.

427-327 CREATIVE DRAMATICS AND CHILDREN'S LITERATURE. Experiences in characterization, story making, story dramatization; an exploration of the elements of drama and dramatic literature at the kindergarten level. 3 credits. (Prerequisite: 427-328).

427-328 CREATIVE MOVEMENT AND DRAMATICS. Experiences in creative drama and the dynamics of space; body movement, improvisation, creative problem solving, control and release of emotional energy. 3 credits.

† **427-343 ADVANCED READING INSTRUCTION — ELEMENTARY SCHOOL.** A critical study of materials in Reading instruction with a view to the diagnostic prescriptive methodology of teaching. Techniques for classroom diagnosis and prescription. 3 credits. (Prerequisite: 427-228 or 427-238) (Co-requisite: 435-421 or 435-431).

* **427-344 CHILDREN'S LITERATURE.** Selection and use of literature suitable for children in the elementary school. 3 credits. Limited enrolment.

427-345 LITERATURE FOR YOUNG ADULTS. Selection and use of literature for the differing abilities and interests of high school students. 3 credits.

427-371 SECONDARY ENGLISH CURRICULUM & INSTRUCTION. Examination of appropriate materials related to the high school English programs; exploration of various techniques of teaching Literature, Drama, Film, and Language Arts. 3 credits.

† **427-374 LANGUAGE IN THE SECONDARY SCHOOL.** A study of language activity (English) among secondary school students: their growth in language competence; oral and written modes in relation to learning and to personal development *(Includes a field experience component).* 3 credits. (Pre-requisite(s): An approved language or linguistics course.)

427-474 PERSPECTIVES ON SECONDARY ENGLISH EDUCATION. Seminar on special interest areas in the teaching of English in the light of contemporary theories and experiments for students who have completed a basic Curriculum and Instruction course and have had some classroom experience. 3 credits. (Prerequisite: 427-371).

427-490 SPECIAL PROJECT. An independent undertaking requiring the preparation, execution, and retrospective analysis of a project focussed on practical activities in a school setting. 2 credits. *(Not offered 1976-77).*

† **427-499 PROCESSES IN READING.** Theories and research findings of the several disciplines which intersect in the process called reading, basic concepts from psychology (learning, perception, cognition, personality, attitude change) and in language (development and linguistics) — examined in relation to instructional procedures of reading programs. (Prerequisites: 200 level courses in reading methods and educational psychology.) 3 credits.

* **427-505 EXPERIENCES IN COMMUNICATION.** Writing, speaking and non-linguistic forms of communication are practised and analysed with a view to each student developing, through personal experience and study, a theory of communication applicable in teaching. 2 hours, 2 terms.

427-522 CURRICULUM AND INSTRUCTION IN READING AND LANGUAGE ARTS — EARLY CHILDHOOD. Reading and language arts curriculum studied in relation to current theories and strategies of learning. Resource materials and aids to teaching and evaluation at the primary level examined. 2 hours, 2 terms.

427-523 READING INSTRUCTION — HIGH SCHOOL: — Methods and materials for the teaching of developmental reading at the high school level. 3 credits.

427-532 CURRICULUM AND INSTRUCTION IN READING AND LANGUAGE ARTS — LATER CHILDHOOD. Reading and language arts curriculum studied in relation to current theories and strategies of learning for the later years of the elementary school. Resource materials and

aids to teaching and evaluation examined. 2 hours, 2 terms.

427-533 INTEGRATED LANGUAGE ARTS PROGRAMS. Methods and materials for integrating reading, listening, writing, speaking aspects of communications instruction. 3 credits.

427-572 ENGLISH CURRICULUM AND INSTRUCTION — SECONDARY SCHOOL. An exploration of approaches to the teaching of language, literature, creative writing, and dramatics in the secondary school. 3 hours, 2 terms.

427-573 ENGLISH CURRICULUM DEVELOPMENT — ADVANCED. An investigation into the theoretical bases of English teaching and a study of recent research into high school English curriculum and instruction. 1 hour, 1 term.

† **427-576 READING IN THE CONTENT FIELDS.** An exploration of reading instruction in secondary programs in the content fields; survey of remedial and developmental reading instruction throughout the elementary and secondary schools, together with review of research in secondary reading. 3 credits.

427-577 CORRECTIVE READING INSTRUCTION AT THE HIGH SCHOOL LEVEL. Reading problems found in remedial classes at the high school level presented in a practicum format covering diagnosis and remediation appropriate for remedial classrooms. 3 credits.

* **427-594 CREATIVE DRAMATICS FOR THE CLASSROOM.** A participatory course in creative drama and the use of improvisational techniques in the pursuit of child development. Limited enrolment. 3 credits.

427-595 IMPROVISATION & THEATRE ARTS FOR THE CLASSROOM. A course beyond the introductory level to provide further perspectives on the teaching of drama and the teaching of improvisation. Instruction and practice in Play production will be included. 3 credits. (Prerequisite: 427-594). *(Not offered 1976-77).*

428 — Education in Mathematics

* **428-241 BACKGROUND MATHEMATICS FOR ELEMENTARY SCHOOL TEACHERS.** A course specially designed for elementary school teachers to provide the basic foundations, insight and understanding of the Quebec modern elementary mathematics programs. Recommended for all elementary school teachers — an elective. 3 credits.
Professors Modafferi and Purdy

428-243 BACKGROUND GEOMETRY FOR ELEMENTARY SCHOOL TEACHERS. A course specially designed for elementary school teachers to provide the basic foundations, insight and understanding of the geometry found in the Quebec Modern Elementary Mathematics programs. 3 credits.

428-291 OBSERVATION AND FAMILIARIZATION. Observation, individual tutoring, and small group work in a secondary or elementary school environment. (Student activity to approximate 10 days in school setting; arrangements by Student Teaching Office in consultation with advisor. 1 credit.

428-322 CURRICULUM AND INSTRUCTION IN MATHEMATICS — EARLY CHILDHOOD. A study of curriculum trends in Early Childhood Mathematics including a survey of programs (local and international), resource materials, learning aids and evaluation procedures. Emphasis on projects and lab-type experiences. 3 credits.
Professors McNicol and Scott

428-332 CURRICULUM AND INSTRUCTION IN MATHEMATICS — LATER CHILDHOOD. A study of the curriculum trends in Later Childhood Mathematics in relation to current theories and strategies of teaching and learning. Methods of instruction, use of resource materials and teaching aids, evaluation procedures designed to prepare prospective teachers to implement the prescribed curriculum in Quebec. 3 credits.
Professor Scott

428-372 SECONDARY MATHEMATICS CURRICULUM AND INSTRUCTION. This course relates to directed observations in secondary schools and includes the study of the general objectives and curriculum trends, as well as the learning problems, teaching strategies and mathematical concepts encountered in the High School curriculum. 3 credits. (Prerequisites: A minimum of 18 credits in Post Secondary Mathematics.)
Professor Modafferi

428-443 PERSPECTIVES ON ELEMENTARY MATHEMATICS EDUCATION. A course to provide a deeper perspective of modern elementary mathematics education through a study of the active learning approach, use of structured materials, modern mathematics projects and research. Separate sections for early and later childhood if enrolment permits — an elective. 3 credits. (Prerequisite: 428-322 or 428-332 or equivalent.) *(Not offered 1976-77).*

* **428-471 BACKGROUND MATHEMATICS FOR SECONDARY TEACHERS.** A course on the nature of mathematics stressing the relationships in its basic structure and providing some of the historical, philosophical and logical bases of the mathematics of the secondary school. (Recommended to all students expecting to teach secondary mathematics.) 3 credits.
Professor Purdy

428-474 COMPUTING AND PROBLEM SOLVING FOR HIGH SCHOOL TEACHERS. The history

and basic principles of digital computing for teachers, including computer systems, data storage, the use of various computer languages specially FORTRAN, methods for solving problems, computer assisted instruction, data processing, statistics and their uses for the teacher, practical experience with a time sharing system for a remote terminal. 6 credits. *(Not offered 1976-77).*

428-490 SPECIAL PROJECT. An independent undertaking requiring the preparation, execution, and retrospective analysis of a project focussed on practical activities in a school setting. 2 credits. *(Not offered 1976-77).*

428-522 MATHEMATICS CURRICULUM AND INSTRUCTION — EARLY CHILDHOOD. A study of curriculum trends in Early Childhood Mathematics including a survey of programs (local and international), resource materials, learning aids and evaluation procedures. Emphasis on projects and lab-type experiences. 2 hours, 1 term.
Professor McNicol

428-532 MATHEMATICS CURRICULUM AND INSTRUCTION — LATER CHILDHOOD. A study of the curriculum trends in Later Childhood Mathematics in relation to current theories and strategies of teaching and learning. Methods of instruction, use of resource materials and teaching aids, evaluation procedures designed to prepare prospective teachers to implement the prescribed curriculum in Quebec. 2 hours, 1 term.
Professor Scott

428-572 MATHEMATICS CURRICULUM AND INSTRUCTION — SECONDARY SCHOOL. A study of the secondary mathematics curriculum in contemporary society with particular emphasis on the Quebec curriculum. Teaching methods and strategies for instruction in mathematics secondary I to V. Objectives and evaluation in mathematics education. A term paper on a significant aspect of mathematics education is required.

Quasi-historical approach used throughout the course. Teaching practice in Montreal schools. 3 hours, 2 terms.
Professor Whitwell

428-573 MATHEMATICS CURRICULUM AND INSTRUCTION (ADVANCED) — SECONDARY SCHOOL. An advanced course in mathematics curriculum and instruction for students with mathematics as a single option. A study of individual student competency levels in mathematics with particular emphasis on criterion sampling in secondary school mathematics. Construction and use of hierarchially structured test-items designed to measure mathematical competency. Practice in preparing, administering and scoring tests. 3 hours, 2 terms.
Professor Whitwell

429 — Education in Music

* **429-200 CLASS PIANO FOR CLASSROOM TEACHERS.** Keyboard experiences through group piano lessons utilizing the multiple key approach: transposition by ear; improvising simple chordal accompaniments for classroom singing, and sight reading. Lab course 1 credit.

* **429-201 BASIC MUSICIANSHIP FOR CLASSROOM TEACHERS I.** Introduction to the elements of music theory through techniques of aural training, sight singing, keyboard, and written applications to be presented as the classroom teacher should teach such elements of music to elementary school students. "Lab work at the keyboard". 3 credits.

* **429-204 UKULELE FOR CLASSROOM TEACHERS.** Basic skills of ukulele playing (picking and strumming); ear training; development of basic music theory. Lab course 1 credit.

* **429-205 RECORDER FOR CLASSROOM TEACHERS.** Basic skills on the recorder; tone production and musical expression; development of functional understanding of fundamental elements of music; preparation of simple descants to accompany classroom singing and other materials and techniques for the classroom teacher. Lab. course 1 credit.

429-212 MUSIC FOR NURSERY-KINDERGARTEN TEACHERS. Contemporary methods in music education at the nursery school and kindergarten level; development of musical skills through groups and individual practice sessions. 3 credits.

* **429-301 BASIC MUSICIANSHIP FOR CLASSROOM TEACHERS II.** Advanced course in the study of the elements of music theory through techniques of aural training, sight singing, keyboard, and written applications to be presented as the classroom teacher should teach such elements of music to elementary school students. Prerequisites: 429-201 and permission of instructor. 3 credits.

429-322 MUSIC CURRICULUM AND INSTRUCTION — EARLY CHILDHOOD. Understanding of the musical development of children at this level by class participation in listening, singing, playing instruments, creating and moving to music. Materials and methods of planning the above experiences. 3 credits.

429-332 MUSIC CURRICULUM AND INSTRUCTION — LATER CHILDHOOD. Materials, methods, planning and organizing of musical experiences for later childhood classes through class participation in singing, playing, moving, creating, reading music and listening activities. 3 credits.

* **(429-341) CREATIVE APPROACHES TO MUSIC LISTENING FOR ELEMENTARY TEACHERS.** A course which concentrates on the form, structure and history of music; stresses a creative approach

to music listening in the elementary grades. Recordings appropriate for children are studied. Pre-requisite(s): 429-201 or permission of the department. 3 credits.

429-522 MUSIC CURRICULUM AND INSTRUCTION — EARLY CHILDHOOD. Understanding the musical development of children at this level by class participation in listening, singing, playing instruments, creating and moving to music. Materials and methods of planning the above experiences. 2 hours, 1 term.

429-532 MUSIC CURRICULUM AND INSTRUCTION — LATER CHILDHOOD. Materials, methods, planning, and organizing of musical experiences for later childhood classes through class participation in singing, playing, moving, creating, reading music, and listening activities. 2 hours, 1 term.

429-542 MUSIC CURRICULUM AND INSTRUCTION — ELEMENTARY. Materials and methods of teaching elementary music. Includes directed observation and videotaped class participation and teaching in an elementary school. 6 hours, 1 term.

429-572 MUSIC CURRICULUM AND INSTRUCTION — SECONDARY. Materials and methods of teaching music in the high school. Includes directed observation and micro-teaching in a high school situation. 6 hours, 1 term.

430 — Education in Social Sciences

430-291 OBSERVATION AND FAMILIARIZATION. Observation, individual tutoring, and small group work in a secondary or elementary school environment. (Student activity to approximate 10 days in school setting; arrangements by Student Teaching Office in consultation with adviser). 1 credit.

430-322 SOCIAL STUDIES CURRICULUM AND INSTRUCTION — EARLY CHILDHOOD. Theories and strategies of learning. Data and resource materials. Evaluation procedures as applied to the primary level. 3 credits.
Ms. Nixon

430-332 LOCAL AND COMMUNITY STUDIES. The place and purpose of community studies in the Quebec elementary social science curriculum. Practical experiences in designing teaching strategies which use the social and economic environment as a medium for learning. Pupil evaluation procedures. 3 credits.
Professors Bradley and Riggs

430-333 COMPARATIVE SOCIAL STUDIES. Methods of teaching geographical and historical case studies as a means of deepening the elementary school child's understanding of the major human activities in his own social and economic environment. 3 credits. (Prerequisite: 430-332.)
Professor Bradley

430-372 GEOGRAPHY CURRICULUM AND INSTRUCTION — HIGH SCHOOL. The Quebec high school geography curriculum. Syllabus structure. The development and practice of methods in geography teaching. 3 credits. *(Not offered 1976-77).*
Professor Burpee

430-375 HISTORY CURRICULUM AND INSTRUCTION — HIGH SCHOOL. The Quebec high school history curriculum. Theories of course structure. Development and practice of teaching strategies in history. 3 credits.
Mr. Kelebay

430-379 SOCIAL STUDIES CURRICULUM — HIGH SCHOOL. A seminar and lecture course which will attempt to introduce students to the New Social Studies, its origins, objectives, and teaching-learning activities. Both the substantive structure and modes of inquiry of the social sciences will be explored as the foundation for curricular and teaching decisions. An investigation of national, provincial and local curricula. 3 credits. *(Not offered 1976-77).*
Professor Bain

430-403 SIMULATION IN THE SOCIAL SCIENCES. A critical analysis of available simulations as strategies in the social sciences. Emphasis on the elements of simulation, the processes of decision-making, and affective learnings. The development of skills in creating, with students, simulations for use in elementary and high school classes. (Prerequisites: 430-322 or 332 or 372 or 375 or permission of Department. 3 credits.
Professor Bradley

430-404 VALUE ANALYSIS IN THE SOCIAL SCIENCES. An examination of the objectives of value analysis. Teaching strategies for valuing in the social sciences with particular reference to social issues and environmental problems. An education elective open to students in elementary and secondary options. 3 credits. (Prerequisites: 430-322 or 430-332 or 430-372 or 430-375).
Professor Riggs.

430-453 FIELDWORK IN SCHOOL GEOGRAPHY. Practical experience in developing and evaluating fieldwork assignments for use with high school geography classes in both rural and urban settings. 3 credits. (Prerequisites: 430-372 or permission of the department).
Professor Burpee

430-473 IN DEPTH STUDY OF CURRICULUM DEVELOPMENT IN GEOGRAPHY. An investigation into the theoretical bases of geography teaching and an exploration of recent research into high school geography curriculum and instruction. 3

credits. (Prerequisite: 430-372). *(Not offered 1976-77).*
Professor Burpee

430-476 IN-DEPTH STUDY OF CURRICULUM DEVELOPMENT IN HISTORY. An exploration of the theoretical bases of history teaching. Study and analysis of recent research in high school history curriculum and instruction. 3 credits. (Prerequisite: 430-375). *(Not offered 1976-77).*
Mr. Kelebay

430-490 SPECIAL PROJECT. An independent undertaking requiring the preparation, execution, and retrospective analysis of a project focussed on practical activities in a school setting. 2 credits. *(Not offered 1976-77).*

430-522 SOCIAL STUDIES CURRICULUM AND INSTRUCTION — EARLY CHILDHOOD. The nature and structure of social studies. Learning processes and teaching strategies. Data collection, resource materials and evaluation procedures. Throughout the course students will be encouraged to observe their own environment and to relate their findings to the social studies course. 2 hours, 1 term.
Ms. Nixon

430-532 LOCAL AND COMMUNITY STUDIES — LATER CHILDHOOD. Objectives and structure of the Quebec elementary social science curriculum. Development of instructional skills and learning strategies in environmental studies: systematic observation, interviewing, opinion polling, sample surveying and simple data analysis. Pupil evaluation procedures. 2 hours, 1 term.
Professors Maconochie and Brown

430-533 COMPARATIVE SOCIAL STUDIES — LATER CHILDHOOD. The creative development of instructional skills and learning strategies in using historical and geographical comparative case studies as means of deepening the elementary school child's understanding of the major human activities in his own social and economic environment. 2 hours, 1 term. (Prerequisite: 430-532.)
Professor Brown

430-569 ADVANCED SOCIAL STUDIES CURRICULUM AND INSTRUCTION. An in-depth study of aims and processes in social science education. Curriculum design and the development of teaching materials and strategies in the area of the student's specialization. Co-requisite: 430-579D. *Restricted to those with economics background in 1976-77). 3 hours, 1 term.*

430-572 GEOGRAPHY CURRICULUM AND INSTRUCTION — HIGH SCHOOL. An examination of geography as a vehicle for education. Analysis of the Quebec and other geography curricula. Methods and teaching strategies. The geography laboratory. Field studies. Evaluation. 3 hours, 2 terms.
Professor Burpee

430-573 IN-DEPTH STUDY OF CURRICULUM DEVELOPMENT IN GEOGRAPHY. An investigation into the theoretical bases of geography teaching and an exploration of recent research into high school geography curriculum and instruction. 3 hours, 1 term. (Co-requisite 430-572).
Professor Burpee

430-575 HISTORY CURRICULUM AND INSTRUCTION — HIGH SCHOOL. An analysis of the content of Quebec and other high school history curricula. Development of skills and abilities in the teaching of history through class exercises and micro-teaching techniques. Practice in devising such teaching and learning strategies as exposition, discussion, group studies, independent studies, role playing, simulation and field work. 3 hours, 2 terms.
Professor Boulianne and Mr. Kelebay

430-576 IN-DEPTH STUDY OF CURRICULUM DEVELOPMENT IN HISTORY. An investigation into the theoretical bases of history teaching and a study of recent research into high school history curriculum and instruction. 3 hours, 1 term. (Co-requisite: 430-575).
Mr. Kelebay

430-579 NEW PERSPECTIVES IN SOCIAL STUDIES CURRICULUM — HIGH SCHOOL. Foundations of "the new social studies". Theoretical course structures. Content and process in political, sociological and economics education. Modes of inquiry in the disciplines and the learner as researcher. The local community as a source of social science data and as a field of study. 3 hours, 2 terms (Prerequisite: Permission of the department).
Professor Maconachie

431 — Education in Second Language

431-291 OBSERVATION AND FAMILIARIZATION. Observation, individual tutoring, and small group work in a secondary or elementary school environment. (Student activity to approximate 10 days in school setting; arrangements by Student Teaching Office in consultation with adviser). 1 credit.

431-301 LINGUISTICS APPLIED TO THE TEACHING OF FRENCH AS A SECOND LANGUAGE. Introduction to general linguistics; the nature and function of language; the relations of current linguistic theories to the selection, progression, presentation, and fixation of French program content; examination and preparation of teaching and remedial materials related to French as a Second Language. (Prerequisites: fluency in French; permission of instructor). 3 credits.

431-302 MEASUREMENT & EVALUATION — TEACHING FRENCH AS A SECOND LANGUAGE. Principles of educational measurement applied to the teaching of French; types of French tests and examinations; analysis of commercially-prepared tests; practice in preparing, administrating, and scoring periodical examinations; qualities of good test items in French, from the point of view of short- and long-term objectives and levels of learning French. (Pre-requisites: Introductory course in general or applied linguistics; permission of instructor). 3 credits.

431-303 MEDIA AND SECOND LANGUAGE TEACHING. Language Laboratory and Audio-Visual Media: psychological and pedagogical rationale, assessment of potentialities and limitations in the process of second language teaching; manipulation of equipment, selection, adaptation and creation of materials; preparation of group and independent learning units, practice sessions. 3 credits.

431-304 CULTURAL CONTENT OF SECOND-LANGUAGE PROGRAMS. Introduction to general sociolinguistics and its implications in second-language teaching particularly in the use and preparation of teaching materials and the study of the local sociocultural scene and institutions. Planning and monitoring a cultural activity with school children. Course offered in French. 3 credits.

† **431-305 PSYCHOLINGUISTICS AND SECOND LANGUAGE TEACHING.** Exploration of areas in psycholinguistics relevant to second language teaching: theories of language acquisition, relationship between first and second language learning, student motivation and individual differences in second language learning, problems of meaning; various educational aspects of bilingualism. Prerequisites: Introductory course in general or applied linguistics; permission of instructor. 3 credits.

431-306 PHONOLOGY AND THE TEACHING OF FRENCH AS A SECOND LANGUAGE. Intensive study of phonological and phonetic features of French as they are relevant to audio-lingual approaches in teaching French as a second language; training in identifying and analyzing French phonological and phonetic difficulties or areas of interference; initiation to phonetic correction techniques. (Pre-requisites: One methods course in French and one basic course in general or applied linguistics;). *(Not offered in 1976-77).* 3 credits.

431-307 DIFFICULTIES ANTICIPATED IN SECOND-LANGUAGE TEACHING. Study of error-analysis; nature and sources of linguistic transfer and its implication for second language teaching; introduction to contrastive linguistics with special applications to the areas that are within the objectives of the various programs of the different school levels. Collection of samples of pupils' second language oral and written production, analysis of errors and planning relevant remedial exercises to be used with these pupils. Course offered in French. Pre-requisites: One basic course in general or applied linguistics). 3 credits.

431-311 LINGUISTICS APPLIED TO TEACHING ENGLISH AS A SECOND LANGUAGE. Introduction to general linguistics: the nature and function of language; the relations of current linguistic theories to the selection, progression, presentation and fixation of English program content; examination and preparation of teaching, remedial and testing materials related to English as a Second Language. Pre-requisite: permission of the instructor. 3 credits.

431-312 MEASUREMENT & EVALUATION AND TEACHING ENGLISH AS A SECOND LANGUAGE. Principles of educational measurement applied to the teaching of ESL; types of ESL tests and examinations; analysis of commercially-prepared tests; practice in preparing, administering, and scoring periodical examinations; qualities of good test items in ESL, from the point of view of short- and long-term objectives and levels of learning in ESL. (Pre-requisites: An introductory course in general or applied linguistics; permission of the instructor. 3 credits.

431-316 PHONOLOGY AND THE TEACHING OF ENGLISH AS A SECOND LANGUAGE. Intensive study of phonological and phonetic features of ESL as they are relevant to audio-lingual approaches in teaching ESL; training in identifying and analyzing ESL phonological difficulties or areas of interference; initiation to phonetic correction techniques. (Pre-requisites: One methods course (ESL) and one course in general or applied linguistics.) *(Not offered in 1976-77).* 3 credits.

431-321 LINGUISTICS APPLIED TO TEACHING MODERN LANGUAGES. Introduction to general linguistics: the nature and function of language; the relations of current linguistic theories to the selection, progression, presentation and fixation of program content in Modern Languages; examination and preparation of teaching, remedial, and testing materials related to teaching Modern Languages. (Pre-requisites: Fluency in Spanish, German or Italian. Permission of instructor.) 3 credits.

431-322 TEACHING FRENCH AS A SECOND LANGUAGE — EARLY CHILDHOOD. For description see 431-522. (Pre-requisites: Adequate fluency in French and permission of instructor.) 3 credits.

431-332 TEACHING FRENCH AS A SECOND LANGUAGE — LATER CHILDHOOD. For description see 431-532. (Pre-requisites: Adequate fluency in French and permission of instructor.) 3 credits.

431-340 ANIMATION TECHNIQUES FOR SECOND LANGUAGE TEACHING. Exploration, demonstration of animating procedures and techniques for enlivening second language and for integrating it into the child's general development. Workshops conducted in cooperation with other departments;

music, media, art, etc., Practical sessions in communication experience. With a group of school children, preparation of a special event, implying the use of special materials and techniques involved in the course. (Offered in French only). 3 credits.

431-344 TEACHING FRENCH AS A SECOND LANGUAGE — ELEMENTARY SCHOOL. Principles of second-language teaching and their application to the teaching of French as a second language at the elementary school; an intensive study of the curriculum: objectives and development; special second-language teaching strategies and techniques; examination and preparation of teaching and testing materials; lesson planning; exercises in micro-teaching situations. 3 credits.

† **431-345 THE BILINGUAL CLASS I.** A study of the various models of bilingual education programs at the elementary school; an examination of the methods and materials used in primary grades to teach French language arts and to impart in French the other components of the curriculum of this level, to pupils whose mother tongue is not French; planning teaching units; observation of bilingual classes and "French immersion classes." (Prerequisites: a high degree of French fluency and a course in applied linguistics). 3 credits.

431-346 THE BILINGUAL CLASS II. A study of the various models of bilingual education programs for later childhood; an examination of the methods and materials used at that level to teach French language arts and to develop French language skills via the teaching of the other components of the curriculum to pupils whose mother tongue is not French; planning teaching units; observation of various types of "French immersion classes". (Prerequisites: a high degree of French fluency and a course in applied linguistics). 3 credits.

431-347 TEACHING ENGLISH AS A SECOND LANGUAGE — ELEMENTARY SCHOOL. Objectives and curriculum; study of second-language teaching principles, methods and techniques; the use and preparation of classroom materials; tutoring in ESL situations. 3 credits.

431-358 TEACHING ENGLISH AS A SECOND LANGUAGE — SECONDARY SCHOOL. Principles of ESL teaching; objectives and curriculum; language skills at secondary level; examination and preparation of teaching and testing materials; lesson planning; exercises in micro-teaching situations. 3 credits.

431-360 SECOND LANGUAGE PRACTICUM. Supervised teaching over at least a five month period of classroom teaching of second languages. (English or French). Through visits, conferences and other appropriate forms of guidance, counsellors assist teachers to integrate acquired knowledge with classroom performance. 6 credits.

431-372 TEACHING FRENCH AS A SECOND LANGUAGE — SECONDARY SCHOOL. Principles of second language teaching; objectives and curriculum; language skills at secondary level; instructional strategies; examination and preparation of teaching and testing materials; the use of audio-visual aids; lesson planning; training in micro-teaching situations. 3 credits.

431-373 IN-DEPTH STUDY OF CURRICULUM DEVELOPMENT IN SECOND LANGUAGES. Guiding principles and current practices of individualized, programmed instruction team-teaching, continuous progress, modular approach independent study as applied to second language teaching; observation and critical study of new experimental approaches. 3 credits.

431-378 LATIN CURRICULUM AND INSTRUCTION — SECONDARY SCHOOL. Objectives and curriculum; instructional strategies; use of teaching materials; preparation of teaching and testing materials; lesson planning; training in micro-teaching situations. 3 credits.

431-379 MODERN LANGUAGE CURRICULUM AND INSTRUCTION (GERMAN, ITALIAN, SPANISH) — SECONDARY SCHOOL. Principles of modern-language teaching; objectives and curriculum; instructional techniques; use of audio-visual aids; preparation of teaching and testing materials; lesson planning; training in micro-teaching situations. 3 credits.

431-490 SPECIAL PROJECT. An independent undertaking requiring the preparation, execution, and retrospective analysis of a project focussed on practical activities in a school setting. 2 credits. *(Not offered 1976-77).*

431-501 LINGUISTICS APPLIED TO SECOND LANGUAGE TEACHING. Can be taken for 431-573. An introduction to general and contrastive linguistics: the relations of current linguistic theories to the selection, progression, presentation and reinforcement of program content. Examination and preparation of teaching and remedial materials. 3 hours, 1 term or 1 1/2 hours, 2 terms.

431-504 CULTURAL CONTENT OF SECOND LANGUAGE PROGRAMS. Can be taken for 431-573. Introduction to general socio-linguistics; study of the local socio-cultural scene; contacts with local cultural and educational institutions; preparation of teaching materials related to the cultural objective of second language teaching. 3 hours, 1 term or 1 1/2 hours, 2 terms.

431-522 TEACHING FRENCH AS A SECOND LANGUAGE — EARLY CHILDHOOD. Principles of second language teaching; objectives and curriculum; teaching techniques and materials; lesson planning and practice. 2 hours, 1 term. (Pre-requisite: adequate fluency in French and permission of instructor.)

431-532 TEACHING FRENCH AS A SECOND LANGUAGE — LATER CHILDHOOD. 2 hours, 1 term. (Pre-requisite: adequate fluency in French and permission of instructor.)

431-540 ANIMATION TECHNIQUES. Exploration and demonstration of animating procedures; techniques to enliven second language learning and to integrate it into the child's general development. Workshops conducted in cooperation with other departments: music, media, art, etc. 1 hour, 1 term.

431-544 TEACHING FRENCH AS A SECOND LANGUAGE — ELEMENTARY SCHOOL. Principles of second language teaching. An intensive study of the curriculum: objectives and development; lesson planning, micro-teaching; second language teaching strategies and techniques. 2 hours, 2 terms.

431-545 THE BILINGUAL CLASS. A study of the various models of bilingual education programs at the elementary school; an examination of the methods and materials used to teach French language arts and to develop French language skills via the teaching of the other components of the curriculum to pupils whose mother tongue is not French; planning teaching units; lesson planning. 2 hours, 1 term.

431-547 TEACHING ENGLISH AS A SECOND LANGUAGE — ELEMENTARY SCHOOL. Objectives and curriculum; study of modern English in a second language perspective; teaching techniques and materials; tutoring in ESL situations. 2 hours, 1 term.

431-548 TEACHING ENGLISH AS A SECOND LANGUAGE — ELEMENTARY SCHOOL. Principles of second language teaching and their application to TESL in Quebec elementary schools; survey of various approaches and techniques used in developing relevant second language skills; utilization of related teaching and testing materials; micro-teaching exercises. 6 credits.

431-558 TEACHING ENGLISH AS A SECOND LANGUAGE — SECONDARY SCHOOL. Principles of ESL teaching; objectives and curriculum; language skills at secondary level; examination and preparation of classroom materials; lesson planning; training in micro-teaching situations. 3 hours, 2 terms.

431-572 TEACHING FRENCH AS A SECOND LANGUAGE — SECONDARY SCHOOL. Principles of second language teaching; objectives and curriculum; language skills at secondary level: teaching and evaluation; examination and preparation of class materials; lesson planning; training in micro-teaching situations. 3 hours, 2 terms.

431-573 IN-DEPTH STUDY OF CURRICULUM DEVELOPMENT IN SECOND LANGUAGES. Examination of new experimental approaches to second-language teaching: immersion, individualized instruction, modular scheduling, team-teaching, programmed instruction, language laboratory, etc. Individual and group research projects. 3 hours, 1 term.

431-578 LATIN CURRICULUM AND INSTRUCTION — SECONDARY SCHOOL. Objectives and curriculum; examination of textbooks and materials; study of Roman Civilization. Latin poetry and Latin works in translation. 3 hours, 2 terms.

431-579 MODERN LANGUAGE CURRICULUM AND INSTRUCTION (GERMAN, ITALIAN, SPANISH) — SECONDARY SCHOOL. Principles of modern language teaching: objectives and curriculum; teaching techniques and materials; training in micro-teaching situations; lesson planning and testing. 3 hours, 2 terms.

432 — Educational Media

† **432-204 EDUCATIONAL MEDIA I.** Application of educational media to the elementary and secondary school teaching and learning situation; rationale and underlying principles, the sources, selection, production, effective utilization and evaluation of the media. Limited enrolment. 3 credits.

† **432-205 FILM PRODUCTION AND FILM CRITICISM.** Educational significance of various projected media, 16mm films, 8 mm films, 35mm slides, multi-media presentations, the utilization of such media, teacher or student production. Limited enrolment. 3 credits.

432-206 CHILDREN'S LITERATURE. The development of media designed for children from the first books written for children to contemporary materials including books, magazines, films and recordings. (See 427-344). 3 credits.

432-303 PHOTOGRAPHY. This course includes the basic technical and aesthetic components of black and white and colour 35mm photography. The course will consist of lectures, seminars and extensive fieldwork and darkroom sessions. Limited enrolment. 3 credits.

432-304 EDUCATIONAL MEDIA II. This course is intended for the individual with some experience in educational media. Topics include communication theory, implications of learning theory for the media specialist, advanced production techniques and the administration of the media centre. (Prerequisite: 432-204). Limited enrolment. 3 credits.

† **432-306 EDUCATIONAL TELEVISION.** This course will survey the development of ETV with particular reference to current topics including children's TV programs, cable and closed circuit ETV. Short TV productions will take place in class to encourage a critical analysis of the potential of portable TV equipment for local teacher and student production. Limited enrolment. 3 credits.

432-307 CATALOGUING AND CLASSIFICATION OF LIBRARY MATERIALS. An introduction to the use of subject headings, the Dewey Decimal Classification and other classification systems for print and non-print materials. 3 credits.

432-308 LIBRARY REFERENCE MATERIALS AND TECHNIQUES. An introduction to basic library reference tools and their use; means of developing effective student utilization of library resources. *(Not offered 1976-77).* 3 credits.

432-309 THE LIBRARY-RESOURCE CENTRE. The developing of a library resource centre including such topics as administration, acquisitions, processing, circulation routines, budgeting, and methods of integrating the library-resource centre into the school curriculum. 3 credits.

432-404 CONTEMPORARY DEVELOPMENTS IN EDUCATIONAL MEDIA. An examination of current trends in educational media including a critical analysis of educational television, computer assisted instruction, systems analysis, programmed instruction, gaming and simulation, etc. 3 credits.

432-405 INDEPENDENT PROJECT. An extensive media production undertaken by the student after consultation with and the approval of the director of the library-media program. 6 credits. (Prerequisite: 432-204.)

433 — Elementary Education

433-312 METHODS AND MATERIALS FOR THE KINDERGARTEN. Analysis of the kindergarten environment with emphasis on equipment, materials, and suggestions for their use. 3 credits.

433-322 CREATIVE PROGRAM SKILLS. An exploration of procedures to encourage imagination, invention and expression through movement, language, literature, art, science, music, drama. 3 credits. (Prerequisite: Background in Art, Music, or Movement recommended.)

433-411 PRE-SCHOOL CURRICULUM. A practicum related to field experience, designed to assist the student in planning and maintaining a learning environment for the pre-school child; emphasis on innovation in pre-school education, cooperation between home and school, selection and use of media and materials, and the individual needs of the child. 3 credits. (Co-requisite: 435-411).
Staff

433-412 NUTRITION AND HEALTH CARE IN PRE-SCHOOL EDUCATION. Consideration of the basic principles of nutrition and health with particular reference to the pre-school child; functions, requirements and sources of specific nutrients; signs of abnormal development and symptoms of childhood illness; principles of safety and First Aid. 3 credits.
Professor A. Smith

433-421 ELEMENTARY CURRICULUM — EARLY CHILDHOOD. A practicum related to field experience, designed to assist the student in planning an integrated program; stress on activity centered instruction, provision for individual differences, use of media and materials, relationships between home and school, evaluation and professional development. 3 credits. (Co-requisite: 435-421).
Staff

433-431 ELEMENTARY CURRICULUM — LATER CHILDHOOD. A practicum related to field experience that will focus on the tactics involved in implementing continuous progress, individualizing instruction, developing heuristic projects for an integrated curriculum; use of media and materials, diagnostic-prescriptive teaching and evaluation. 3 credits. (Co-requisite: 435-431).
Staff

433-441 EDUCATION IN THE NORTH — INTRODUCTION. Study of Northern schools as unique pedagogical settings; review of physical, economic and human factors affecting curriculum needs in northern areas of the world, particularly remote and Arctic Quebec. 3 credits.
Professor Cram

433-444 EDUCATION IN THE NORTH — CURRICULUM. A practicum designed to assist the student in planning and maintaining a learning environment for children in isolated areas; emphasis on innovation in education, home and school co-operation, selection and use of materials. 3 credits.

434 — Physical Education

* **(434-203) INTRODUCTION TO PHYSICAL EDUCATION.** An introduction to the role of the physical educator within education and the community: physical growth and motor development principles with particular reference to their importance in teaching physical education: an analysis of the teaching styles that the physical educator may use in different programs. 3 credits.
Physical Education Staff

* **434-204 HEALTH EDUCATION.** This course is designed to help the prospective physical education teacher understand his/her role in the total school health program in the elementary and high school. A study of current issues pertaining to health and health education is made, including the problems facing the individual in today's complex and changing society. 3 credits.
Professor Nichol

434-205 BIOMECHANICS — STRUCTURAL ANALYSIS. Skeletal, muscular and nervous system are examined anatomically and physiologically within the realm of how they interact to generate and apply the forces which permit man's mobility. Lab: Rhesus monkey dissection. 3 credits.
Professor Greenisen

* **434-206 BIOMECHANICS — KINEMATICAL ANALYSIS.** Analysis of fundamental human movement and the kinematic concepts which underlie each: Stability, agility, walking, running, jumping, throwing, absorbing forces, striking, kicking, spinning, twisting, aquatics and work positions. 3 credits.
Professor Greenisen

* **434-207 TESTS AND MEASUREMENT IN PHYSICAL EDUCATION.** The function of this course is to acquaint students with the selection, construction and use of tests designed to measure sports skills, motor abilities, physical fitness and related knowledge. It includes an introduction to elementary statistics as related to their use in the physical education teaching situation. 3 credits.
Professor Marisi

* **434-224 FOUNDATIONS OF MOVEMENT EDUCATION.** Personal and creative activity in manipulative, non-manipulative and expressive motor activity; the study of basic movement education concepts, principle of movement and the role of movement education in the life of the developing child. 3 credits.

* **434-291 INTRODUCTION TO COMMUNITY RECREATION.** The need for, scope of, and problems associated with community recreation will be studied. The relationship between the organizational structure and programs offered by a recreation agency will be examined. Students will study the different types of recreation agencies within a community and consider means to coordinate their services. 3 credits.
Professor A. E. Wall

* **(434-292) RECREATION LEADERSHIP.** Students will be guided to select, use, and evaluate different leadership techniques in a variety of recreation situations. Students will consider theoretical readings on leadership and examine the relationship between program content and leadership style in practical sessions. 3 credits.
Professor A. E. Wall

* **434-331 INTRODUCTORY HOMEOSTATIC PHYSIOLOGY.** Introduction to the basic principles of physiological mechanisms which maintain homostasis of the mammalian organism during non-stress conditions: cell function, neural systems and conduction; kidney, blood, cardiovascular system; respiration and metabolism. 3 credits.
Professor Montgomery

* **434-342 ELEMENTARY PHYSICAL EDUCATION METHODS.** This course is designed to enable the physical education teacher to provide a developmentally sound program of varied activities suitable to the needs of children K-6. Students will have opportunities to observe and interact with elementary children as well as planning, teaching and evaluating micro-lessons. 3 credits.
Physical Education Staff

* **434-391 ERGO-PHYSIOLOGY.** Emphasis is on human organic adaptability; acute and chronic adaptive mechanisms to exercise and other environmental stresses are analysed. A laboratory program is included to evaluate (measure and predict) adaptive capacity and assess factors affecting it. 3 credits. (Pre-requisite: 434-331A).
Professor Klissouras

(434-421) MOVEMENT EDUCATION — CURRICULUM AND INSTRUCTION — EARLY CHILDHOOD. 3 credits. (Offered to B.Ed. students with the exception of Physical Education majors)

(434-431) PHYSICAL EDUCATION — CURRICULUM AND INSTRUCTION — LATER CHILDHOOD. 3 credits. (Offered to B.Ed. students with the exception of Physical Education majors)

(434-480) FIELD EXPERIENCE — RECREATION EDUCATION. 3 week full-time experience in a selected recreation agency for those students seeking full-time employment in the field of recreation. Selection of the agency will be undertaken jointly by student and adviser. 3 credits.
Physical Education Staff

* **434-492 PSYCHOLOGY OF MOTOR PERFORMANCE.** This course is concerned with selected psychological factors in terms of their relationship to the acquisition of motor skills, that is, how they affect the skill acquisition of the individual and how the activity patterns of the individual affect the psychological factors. 3 credits.
Professors Marisi and Neil

* **434-493 ADMINISTRATION OF PHYSICAL EDUCATION.** Organization and administration of programs in Physical Education; emphasis on common problems encountered by physical educators in the instructional, intramural and interscholastic areas. 3 credits.
Professor Wilkinson

434-494 PRINCIPLES & CURRICULUM DEVELOPMENT IN PHYSICAL EDUCATION. Directed towards an understanding of the important principles which should be the foundation of a modern program in Physical Education; student's role in the development, implementation and evaluation of the Physical Education Curriculum. 3 credits.
Professor Riley

434-495 SCIENTIFIC PRINCIPLES OF ATHLETIC TRAINING. Application of physiological and kinesiological principles in the selection,

administration and evaluation of athletic conditioning programs; specific topics studied will include circulorespiratory training, intermittent training, isometric training, weight training, calisthenic principles and circuit training methods. In order that topics of special interest to women or men may be considered, separate sections will be scheduled. 3 credits. (Pre-requisites: 434-331 and 434-391).
Professors Montgomery and Walker

* **434-496 PHYSICAL EDUCATION FOR EXCEPTIONAL CHILDREN.** Identification, evaluation, and remediation techniques basic to the development of effective physical education programs for educable mentally retarded children and children with specific learning disabilities; Progressive motor learning experiences related to body image, spatial relations, eye-hand coordination, and balance will be developed, applied and evaluated. 3 credits. (Pre-requisites: 434-242 or consent of instructor).
Professor A. E. Wall

* **434-497 HISTORICAL AND COMPARATIVE ASPECTS OF PHYSICAL EDUCATION AND SPORT.** An historical study of the origins and development of physical education and sport, and a comparative study of physical education and sport practices of many nations. 3 credits.
Professor Riley

* **(434-498) SOCIAL-PSYCHOLOGY OF SPORT.** This course is concerned with the social and psychological aspects of participation in physical activity and sport. It examines the application of sociological and psychological knowledge and methodology within sport and the findings of such sport and related physical activity research. 3 credits. Prerequisite: 414-260 Intro to Ed. Psych.
Professor Neil

434-521 MOVEMENT EDUCATION — CURRICULUM AND INSTRUCTION — EARLY CHILDHOOD. (2 hours) Offered to Diploma in Education students.

434-531 PHYSICAL EDUCATION — CURRICULUM AND INSTRUCTION — LATER CHILDHOOD. 2 hours. Offered to Diploma in Education students.
Professor Reid

PHYSICAL EDUCATION SKILLS AND TECHNIQUES

Physical Education majors must complete a minimum of 18 credits in techniques chosen from the list below. Eleven credits are required for men and ten for women. The balance are to be chosen from the optional list.

The following courses include personal skill development, teaching sequences and strategies specific to the course selected.

Required Physical Education Skills and Technique Courses

Men (11 credits)

434-210	Educational Gymnastics
434-211	First Aid
434-212	Folk Dance or Intro. Creative
or **220**	Dance
434-213	Intro. Aquatics
434-214	Intro. Basketball (Men)
434-216	Intro. Gymnastics
434-217	Intro. or Adv. Track & Field
434-218	Intro. Volleyball (Men)
434-221	Intro. Wrestling
434-222	Outdoor Education
434-223	Early Childhood Activities

Women (10 credits)

434-210	Educational Gymnastics
434-211	First Aid
434-212	Folk Dance
434-213	Intro. Aquatics
434-215	Intro. Basketball (Women)
or **219**	Intro. Volleyball (Women)
434-220	Intro. Creative Dance
434-216	Intro. Gymnastics
434-217	Intro. or Adv. Track & Field
434-222	Outdoor Education
434-223	Early Childhood Activities

Optional Physical Education Skills & Technique Courses

Men (min. of 7 credits)

434-313	Adv. Aquatics (Men)
434-314	Adv. Basketball (Men)
434-335	Adv. Footbal
434-316	Adv. Gymnastics (Men)
434-329	Adv. Ice Hockey
434-321	Adv. Wrestling
434-318	Adv. Volleyball (Men)
434-225	Archery/Golf
434-226	Badminton/Racquetball/Squash
434-227	Field Games
434-228	Intro. Football
434-229	Intro. Ice Hockey
434-230	Lacrosse
434-231	Martial Arts
434-311	Prevention & Care of Athletic Injuries
434-232	Skiing
434-233	Soccer
434-234	Team Handball
434-235	Tennis/Curling

Women (min. of 8 credits)

434-323	Adv. Aquatics (Women)
434-315	Adv. Basketball (Women)
434-320	Adv. Creative Dance
434-310	Adv. Educational Gymnastics
434-338	Adv. Field Hockey

434-326	Adv. Gymnastics (Women)
434-319	Adv. Volleyball (Women)
434-225	Archery/Golf
434-226	Badminton/Racquetball/Squash
434-236	Field Games I
434-336	Field Games II
434-237	Ice Activities
434-238	Intro. Field Hockey
434-219	Intro. Volleyball or Intro.
or **215**	Basketball
434-231	Martial Arts
434-311	Prevention & Care of Athletic Injuries
434-239	Rhythmic Gymnastics
434-232	Skiing
434-235	Tennis/Curling

435 — Student Teaching

DIRECTED OBSERVATION Supervised field courses which provide an opportunity for the student to observe pupils in the school environment, the role and responsibilities of the teacher, the processes of teaching and learning, etc. Includes introductory conferences, seminars and some teaching experience. (Co-requisite: 448-305)

435-215 DIRECTED OBSERVATION —PRESCHOOL. 3 credits.

435-245 DIRECTED OBSERVATION — ELEMENTARY SCHOOL. 3 credits.

435-246 DIRECTED OBSERVATION — ELEMENTARY PHYSICAL EDUCATION. 3 credits.

435-295 DIRECTED OBSERVATION — ELEMENTARY & SECONDARY SCHOOLS. 3 credits.

435-375 DIRECTED OBSERVATION — SECONDARY SCHOOL. 3 credits.

FIELD EXPERIENCE Supervised field courses arranged by the Student Teaching Office with the cooperation of regional schools. Under the guidance of an assisting teacher, students work in a classroom over an extended period of time, teaching at the level and in the subject areas appropriate to their individual programs. In conjunction with this practical experience the faculty provides conferences and seminars in related methodologies as well as individual counselling and postpracticum evaluation.

435-235 FIELD EXPERIENCE — SECONDARY (Plan Directeur). 4 credits

435-344 SEMINAR PRACTICUM. Designed for U2 elementary students involving participation in real or simulated classroom situations with a view to providing experience in teaching strategies. Students will be expected to student teach at the level of their option. 3 credits. *(Prerequisite: Satisfactory completion of 435-245 & permission of instructor).*

435-346 FIELD EXPERIENCE — ELEMENTARY SCHOOL. 9 credits.

435-347 FIELD EXPERIENCE — ELEMENTARY SCHOOL. 6 credits

435-374 FIELD EXPERIENCE — SECONDARY SCHOOL (1 subject). 3 credits

435-376 FIELD EXPERIENCE — SECONDARY SCHOOL (1 subject). 9 credits

435-377 FIELD EXPERIENCE — SECONDARY SCHOOL (2 subjects). 9 credits

435-394 FIELD EXPERIENCE — ELEMENTARY & SECONDARY SCHOOLS. 3 credits

435-395 FIELD EXPERIENCE ELEMENTARY & SECONDARY SCHOOLS. 6 credits

435-411 FIELD EXPERIENCE — NURSERY — KINDERGARTEN. 9 credits (Co-requisite 433-411)

435-421 FIELD EXPERIENCE — EARLY CHILDHOOD LEVEL. 9 credits (Co-requisite 433-421)

435-422 FIELD EXPERIENCE — EDUCATION IN THE NORTH. 6 credits

435-431 FIELD EXPERIENCE — LATER CHILDHOOD LEVEL. 9 credits (Co-requisite 433-431)

435-444 FIELD EXPERIENCE — ELEMENTARY SCHOOL. 3 credits

435-478 FIELD EXPERIENCE — SECONDARY (1 subject) 6 credits

435-496 FIELD EXPERIENCE — ELEMENTARY & SECONDARY SCHOOLS. 9 credits

435-544 CLASSROOM INTERNSHIP IN ELEMENTARY SCHOOLS.
Semester A: 2 days a week, Semester B: 3 days a week.

435-574 CLASSROOM STUDENT TEACHING — HIGH SCHOOL
Semester A: 2 days orientation, 3 weeks in classroom
Semester B: 2 days orientation, 5 weeks in classroom

436 — Technical-Vocational and Business Education

436-266 BASIC INTEGRATED COURSE IN TECHNICAL VOCATIONAL EDUCATION (PLAN DIRECTEUR). An interdisciplinary approach to the theories and practices of teaching and learning in the area of Technical Vocational Education. 8 credits.

436-267 DEVELOPMENT OF VOCATIONAL EDUCATION IN QUEBEC. A study of the trends in Vocational Education in Quebec with emphasis on the period since 1945. Consideration will be given to the effects of Federal and Provincial legislation and Ministry regulations as these relate to Vocational teachers. 2 credits.

436-268 INSTRUCTIONAL TECHNOLOGY IN VOCATIONAL EDUCATION. An integrated study of introductory concepts of media strategies, communications theory, and research and development in the teaching of vocational subjects. Emphasis will be placed on individual project development in each participating teacher's area of specialization. 6 credits.

436-269 INSTRUCTIONAL DESIGN IN VOCATIONAL EDUCATION. An integrated study of introductory concepts in the development and evaluation of instructional design in Vocational Education. Emphasis will be placed on individual project development in each student's teaching speciality. 4 credits.

436-277 ORIENTATION TO INDUSTRY. This course is a pre-requisite for 436-278. It provides a perspective of the participants' role as an observer through seminars and field trips. Management of human resources, the internal structure and operation of industry, the rate of technological change, and demands upon personnel will be studied. 2 credits.

436-278 INDUSTRIAL FIELD EXPERIENCE. Three weeks full-time observation on location in an industry or business followed by an extensive technical report. The work situation chosen by an individual should relate to his/her technical trade or business specialization as currently taught by that person at the secondary school level. 6 credits.

436-366 INTRODUCTION TO TECHNOLOGY. To prepare the Technical-Vocational teacher to teach the Secondary II course Introduction to Technology. The aim of this course is that the student should become aware of the technological world through manipulation, observation and design of technological objects. 6 credits.

436-375 APPROACHES TO TEACHING HOUSING AND DESIGN. An analysis of factors influencing the choice of housing and the selection of interior furnishings. Techniques to be used by teachers involved in the housing and design sector of the home economics curriculum. Pre-requisite: 370-341 is recommended. 3 credits.
Dr. Gradwell.

436-562 TEACHING METHODS IN BUSINESS EDUCATION. A course in general teaching principles which will include the teaching and learning process, lesson planning, unit planning, and techniques of instruction specific to:
a) Accounting and Business Machines
b) Typewriting and Shorthand. 3 hours, 2 terms.
Professor Waddell

436-564 ORGANIZATION AND ADMINISTRATION OF BUSINESS EDUCATION. A course designed to investigate the place of Business Education in the secondary school curriculum and to indicate to the beginning teacher the need for good planning and administration in the classroom routine and to develop an ability to evaluate various aids to the learning process. 3 hours, 2 terms.
Professor Hicks

436-572 METHODS IN TEACHING TECHNICAL AND VOCATIONAL SUBJECTS. Methods and techniques of instruction in vocational education subjects. Classroom management and administration. Lesson planning and use of instructional materials. Individual assignments, demonstrations and reports. Special problems of the teacher. 3 hours, 2 terms.

436-574 ORGANIZATION AND ADMINISTRATION IN TECHNICAL-VOCATIONAL EDUCATION. This course deals with the principles of effective management, safe planning, architectural considerations, material and tool control, purchasing and maintenance of equipment, student personnel, and teacher responsibilities. The student will plan an instructional area in order to develop an understanding of the principles for producing the necessary two and three dimensional visual materials required for more effective lesson presentation and curriculum development. 3 hours, 2 terms.

436-575 CURRICULUM DEVELOPMENT IN TECHNICAL-VOCATIONAL EDUCATION. Curriculum organization of technical vocational education in harmony with the needs of contemporary society; readings, discussions, terminology, aims and objectives, analysis, instructional units, principles of course organization and planning of curricula for specific situations. 3 hours, 1 term.

436-576 EDUCATION EVALUATION IN TECHNICAL-VOCATIONAL EDUCATION. Emphasis on student growth and progress in public education; appraisal of specialized techniques of evaluation, teacher made tests, and data analysis as specifically related to Technical-Vocational Education. 3 hours, 1 term.

Core Programs

446-504 ORIENTATION TO ELEMENTARY SCHOOL TEACHING. 1 hour, 2 terms.

446-505 ORIENTATION TO SECONDARY SCHOOL TEACHING. 1 hour, 2 terms.

448-305 AN INTEGRATED STUDY OF TEACHING AND LEARNING. An interdisciplinary course which introduces students to the theories and practices of teaching and learning, touching upon philosophy, psychology, sociology, history, research in education, the adoption of educational innovation and the discipline which form part of the school curriculum. 6 credits.

449 — Professional Development for College Teachers

449-580 COLLEGE EDUCATION IN QUEBEC. An identification and analysis of major issues in college education with specific reference to the development of the CEGEP within the framework of Quebec society; a study of the current structures of the CEGEP and of the educational community it serves. 3 credits.

449-581 APPROACHES TO COLLEGIAL LEARNING AND TEACHING. Exploration of alternative modes of college-level learning arising from philosophy, psychology, sociology, and research in education; critical appraisal of traditional and innovative approaches to learning; application to and implementation of course design with specific reference to the needs of the participants. 3 credits.

449-582 EDUCATIONAL THEORY AND INSTRUCTIONAL STRATEGIES. A consideration of various instructional strategies and educational theory with particular emphasis on the selection of strategies relevant to the level and content of CEGEP programs. 3 credits.

449-583 DEVELOPMENT OF A TEACHING SCHEMA. Supervised development of a teaching schema relevant to the discipline taught: statement of course objectives, detailed outline of course content, description of teaching strategies, use of appropriate material and student assignments, and evaluation procedures. Sessions by seminar and/or tutorials. 3 credits.

449-584 LABORATORY TEACHING. An analysis of laboratory oriented teaching in the career sectors at the collegial level: Provincial and local regulations — safety, accident prevention, teacher responsibilities and legal implications; laboratory rules, equipment, report writing, student behaviour and attitudes; pedagogical objectives, teaching methodology, subdivision of subject matter, student evaluation, standards of performance. 3 credits.

449-585 APPLICATION OF A TEACHING SCHEMA. A supervised practicum designed to improve, by methods of critical analysis, the ability to implement a teaching schema. This practicum will include seminars and personal counselling sessions. 6 credits.

449-586 FIELD PROJECT IN INDUSTRY. An independent study to provide participants with an opportunity to examine new techniques and training programs in industry in order to improve teaching skills and/or to initiate changes in course and program designs that will establish closer relationships between the training of CEGEP students and the needs of industry. 3 credits.

The following courses are offered to Faculty of Education students ONLY by the Department of Biology. Details may be obtained from the Faculty of Education Office or from the Core Curriculum Director, Room W4/8, Stewart Biology Building.

177-208 BIOLOGY OF ORGANISMS I. 3 credits.
177-209 BIOLOGY OF ORGANISMS II. 3 credits.
177-210 LABORATORY IN BIOLOGY OF ORGANISMS I. (2 credits).
177-211 LABORATORY IN BIOLOGY OF ORGANISMS II. (2 credits).
177-203 CELL AND MOLECULAR BIOLOGY I. (3 credits).
177-204 CELL AND MOLECULAR BIOLOGY II. (3 credits).

In addition to music courses listed in the Faculty of Arts and Science **Announcement** the following courses are available to B.Ed. students who have the required background in music studies. Students lacking the necessary prerequisities may take these courses with the permission of the instructor.

221-351 KODALY METHOD & WORKSHOP 2 credits
221-353 ORFF METHOD & WORKSHOP 2 credits
221-235 VOCAL TECHNIQUES 2 credits
223-250 GUITAR TECHNIQUES 2 credits
223-251 RECORDER TECHNIQUES 2 credits
223-355 SUZUKI METHOD & WORKSHOP 2 credits
222-356 KEYBOARD SKILLS I 1 credit
222-357 KEYBOARD SKILLS II 1 credit
222-456 KEYBOARD SKILLS III 1 credit
222-457 KEYBOARD SKILLS IV 1 credit

Ensemble courses are also available to B.Ed. students by audition under the same conditions that apply to Arts and Science students.

5 FACULTY REGULATIONS

THE ACADEMIC YEAR

Generally speaking McGill's academic year is made up of two sessions, the fall/winter or regular session and the summer session. These are subdivided, where appropriate, into the fall term (September to December), the winter term (January to May) and the two parts of the summer session (mid-May to end of June and early July to mid-August).

ATTENDANCE

The pattern of attendance necessary to satisfy the requirements of course work will vary according to the nature of different subjects and the professors' approaches to them. A course constitutes a contractual and social obligation between the professor and the student. It is, therefore, the responsibility of the professor to make students aware of the unique requirements of a course and the manner in which they may be fulfilled, and the responsibility of the student to meet these requirements.

(The intention of the foregoing is to avoid the imposition of arbitrary and artificial attendance regulations. The absence of restrictions implies confidence in the maintenance of a state of good will, mutual trust and common sense among the parties concerned.)

STUDENT CATEGORIES AND COURSE LOADS

Full-time students

Full-time students in Satisfactory standing take a minimum of 12 credits per term.

Full-time students in Probationary standing take a maximum of 12 credits per term to which they may add a repeated course in which a grade of "D" was originally obtained. Students who have a GPA of 3.0 or higher may add to the normal load of 15 credits per term by enroling in up to 18 credits per term.

Part-time students

Part-time students take fewer than 12 credits per term.

Special Students

A special student takes regular credit courses, but is not working towards a degree or diploma. To qualify for this status a student must have a specific approved plan of study. Applications must be made at the Office of the Associate Dean (Student Affairs).

Visiting Students

A visiting student is one who is taking courses at McGill for credit at another university. Applications must be made at the Office of the Associate Dean, (Student Affairs).

CREDIT SYSTEM — B.ED. PROGRAMS.

Each course is assigned a credit rating reflecting the amount of effort it demands of the student. This usually represents the number of weekly contact hours the course requires. In general a 3 credit course indicates 3 hours of lectures (laboratory periods, conference, etc.) per week for one term. A minimum of 90 approved credits is required for the B.Ed. degree; at least 60 of these 90 approved credits must be taken at McGill.

The course promotion system is used to evaluate student progress. A grade point average (GPA) is calculated by multiplying the course credit value by the numeric value of the grade and dividing the sum of the grade points earned by the number of credits attempted.

Example	Credits Attempted	Grade	Numeric Value	Earned Grade Points
Course 1	6	A	= 4	24
Course 2	4	B	= 3	12
Course 3	3	C	= 2	6
Course 4	3	D	= 1	3
Course 5	3	F	= 0	0
Course 6	6	A	= 4	24
Course 7	6	B	= 3	18
	31			87

$$\text{Sessional GPA} = \frac{87}{31} = 2.81$$

Other letter grades and their impact on averages are explained below.

A cumulative grade point average (CGPA) will be calculated comprising the student's entire record at McGill in a degree program.

Grades of A, B and C are deemed to be satisfactory passes, D a conditional pass and F a failure. Certain courses have been approved for Pass/Fail (P/F) grading. In almost all programs, required or prerequisite courses must be passed with C standing or better. Grades of D and F continue to be used in the calculation of the CGPA even after a subsequent mark is submitted.

Standing will be determined by the grade point average achieved by the student.

Satisfactory Standing

A student enters the University in satisfactory standing and remains in this standing unless the GPA for any year drops below 2.0.

Probationary Standing

A student whose GPA drops to between 1.5 and 1.99, is placed in probationary standing.

A student in probationary standing must return to satisfactory standing within one year by obtaining a GPA of 2.5 or CGPA of 2.0, otherwise the student will be placed in unsatisfactory standing.

Definition of Letter Grades

All courses taken at McGill and all results obtained appear on the transcript. The following is an explanation of the letter grades used by the Faculty of Education.

A	80 - 100%		
B	65 - 79%	Satisfactory Pass	See Credit System above
C	55 - 64%		
D	45 - 54%	Conditional Pass	
F	0 - 44%	Failure	
P		Pass	
J		Absent	Included as F in average
K		Incomplete	No average calculated if "K" on record
KF		Incomplete Failed	Included as F in Average.
KK		Completion not required	Not counted in average.
K*		Incomplete — extension granted	No average calculated.
L		Deferred	Not included in average.
L*		Permitted to complete course.	No average calculated.
W		Withdrew	Not included in average.
WF		Withdrew failing	Not included in average.
WL		Permitted to withdraw from a deferred examination.	Not included in average.
X		Extra	Not included in average.
M		Exempt	Not included in average.

Unsatisfactory Standing

A GPA of less than 1.5 places a student in unsatisfactory standing.

Students in unsatisfactory standing must withdraw. They may be readmitted to probationary standing upon appeal to the faculty. Students in unsatisfactory standing for the second time will be required to withdraw permanently.

[Cumulative grade point averages are restarted at zero when a student changes degree programs, e.g. B.A. to B.Ed.]

Course Changes

Students wishing to make changes to the courses for which they are registered (dropping a course, adding a course) must do so through the coordinator's office. Such changes should not introduce conflicts in the timetable nor destroy the required sequence of courses approved by the student's advisor.

Students must obtain the approval of the instructor and their advisor before adding courses. The Faculty offering the course sets deadlines for changes.

Withdrawal from Course

Withdrawal from a course after the change of course period will be allowed by the Associate Dean (Student Affairs) up to the date specified in the Faculty announcement. Students who have not officially withdrawn from courses they are no longer attending will have a failing grade ('J') recorded at the end of the session.

Withdrawal from the University

The responsibility for initiating withdrawal rests solely with the student. Neither notification of the course instructors nor discontinuance of class attendance will suffice. A student who wishes to withdraw officially from the University during the academic year must secure permission from the Office of the Associate Dean (Student Affairs). The appropriate form will be supplied. A student considering withdrawal is strongly urged to consult his Advisor before making a final decision. Fees for the term in which the student withdraws are refundable according to the regulations set out in the **General Announcement.** The student ID card must be attached to the withdrawal form.

EXAMINATIONS/INCOMPLETE COURSES

Examinations

Students may write term papers and their answers to examinations in English or French, except in the case of certain language and literature courses.

Class Tests

Members of the teaching staff may from time to time give interim class tests if they think them necessary.

Final Examinations

Final examinations are held during an examination period following the term in which the course is given. In some courses there is no final examination; standing in these courses is determined on the basis of term work and class tests.

Instructors are not permitted to grant any special treatment regarding examinations to any student. If a student believes there is some circumstance which might be legitimately taken into account in evaluating his performance, he should apply to the Associate Dean (Student Affairs).

Supplemental Examinations

There is a supplemental examination period during the month of August. A student may receive permission to write supplemental examinations in courses in which he obtained a D or an F. It should be noted that supplemental examinations are not necessarily available in all courses and that in fact no supplemental examinations are offered in Art, Music, Second Languages and Student Teaching. It is the student's responsibility to determine this by checking with the instructor, and to avail himself of this privilege at the time of the next supplemental examination period. His supplemental result will not erase the D or F originally obtained which was used in calculating his GPA. Both the original mark and the supplemental result will be calculated in the CGPA (i.e. the taking of supplemental examination has the same effect on a student's GPA as does repeating the course). Written application to write a supplemental examination must be received at the Associate Dean's Office. Special permission is required if a student wishes to write supplementals totaling more than 6 credits. A fee of $10.00 for each supplemental paper is payable to the Cashier as soon as the application has been approved. A student who does not intend to write the supplemental for which he is registered should officially withdraw, otherwise a grade of "J" (Absent) will be recorded ("J" counts as an F in CGPA calculations).

In certain cases, a student may be permitted to write one supplemental examination during the April-May examination period in a first term course in which he has obtained a D or an F, if the course is also given in the second term. No attempt is made to avoid conflict between this supplemental and the student's required final examinations, and in the case of such a timetable conflict the student will be required to write the final examination and postpone the supplemental to the August period.

Depending on the course, the supplemental result may or may not include the same proportion of class work as did the original grade. The instructor will announce the arrangements to be used for his course early in the term.

Deferred Examinations

A student who, for reasons such as illness or family affliction, has been unable to write one or more examinations, may receive permission to write deferred examinations in their stead which will normally be written in the next supplemental examination period. The Associate Dean's office must be informed within one week of the examination of the reasons for absences. An "L" will appear on the Report of Standing in place of a grade in such courses, and will be replaced by the grade obtained in the deferred examination after it has been written.

Reassessment of a Grade

Papers are marked and grades calculated and handled with considerable care. However, if a student wishes his marks checked or his examination paper re-read, he should apply in writing to the Office of the Associate Dean (Student Affairs). There is a fee of ten dollars which will be refunded if an error is found in the student's favour. If the result is a lower mark, the lower mark will stand and there will be no refund. Requests for reassessment of standing in more than one course will not be permitted.

Any request to have a term paper reassessed must be made directly to the professor concerned.

Incomplete Courses

If, in the instructor's opinion, there is sufficient reason to permit a delay in the submission of required term work, an extension of deadline of up to four months after the end of the course may be granted the student. In this case, the instructor will submit a grade of "K" (incomplete). If a new grade is submitted within the deadline by the instructor, this will appear on the student's Faculty reports and verification forms following the K and will replace the K on the student's official transcript.

If the required work is not completed before the deadline the grade of KF will be recorded in the same way as the grade above. (KF denotes a failed course and has the same effect on the GPA as an F.)

In exceptional circumstances, and with the approval of the Associate Dean (Student Affairs) the four month deadline may be extended further, in which case the grade of K* will appear.

A student who has not, without accepted excuse, participated or written the final examination in a course for which he has registered may be given a grade of J (absent).

Student Teaching

Satisfactory progress in the student's program is a pre-requisite for placement in the major student teaching experience.

If a student is evaluated as unsatisfactory in the field experiences of the program, he will be required to withdraw from the Faculty.

Supplemental examinations are not available in Student Teaching.

Students who, for reasons such as illness or family affliction, are unable to attend their school, must immediately inform the Student Teaching Office at 392-8830.

DRESS REGULATIONS

There are no specific dress regulations in force in the Faculty of Education but all students enrolled in Teacher Certification programs are advised that Regional School Boards and individual schools may

have regulations concerning acceptable attire. Students are advised to adhere to any such regulations.

LANGUAGE REQUIREMENT

One of the Government requirements for teacher certification in the Province of Quebec is a fluent command of the language of instruction. Education students who cannot demonstrate this fluency cannot be recommended for certification and will be required to withdraw from the Faculty. It is therefore very important that students whose mother tongue is not English or French should, if they have not already done so, obtain the approval of the Chairman of either the Department of Education in English (392-8844) or the Department of Second Languages (392-8861) as soon as possible and before registration. In addition, all applicants are reminded that the normal language of instruction at McGill is English. Candidates must therefore possess a good functional knowledge of English before commencing their studies.

SUMMER SCHOOL CREDITS

Students wishing to enrol in Summer School courses at McGill or elsewhere and who wish to have credits earned count towards their degree, must obtain the permission of the Associate Dean (Student Affairs) in advance and, if the course is taken elsewhere than at McGill, must arrange to have an official transcript of marks forwarded to the Office of the Associate Dean.

TRANSFER CREDITS

N.B. Credit in courses for which the lowest passing grade was received is not transferable.

Bachelor of Education Programs

Credit may be granted by the Faculty of Education for courses taken at recognized universities other than McGill but not more than 30 credits of this type will be allowed towards the B.Ed. degree. Students seeking advanced standing upon admission should clearly indicate on their Application Forms which courses they wish to have considered for this purpose. Students already enrolled in the program must obtain approval from the Associate Dean (Student Affairs) before embarking on such courses. Normally, such transfer credits should be taken in the early part of the degree program. Students should note that the actual marks or grades achieved in transfer-credit courses are not included in CGPA calculations.

McGill Diploma in Education and Certificate Programs

Transfer credit in these programs is not normally possible because of the Provincial requirement to complete a full-year of studies for scolarité purposes. However, students who can show proof of having taken equivalent courses over and above the requirements for their Degree or Diploma of Collegial Studies, should apply for credit transfer in the first instance to the Associate Dean (Student Affairs.)

B.Ed. — For Certified Teachers (Elementary Education)

Teachers enrolled in this program may transfer up to 30 credits from a recognized university other than McGill. In general, the same regulations apply as for the full-time B.Ed. degree program. A maximum of 45 Education course credits may be applied to the Degree from the Diploma programs in Kindergarten, Reading, Special Education, Educational Media and the Certificate in Second Languages. A maximum of 30 credits may be applied to the Degree from the McGill post-CEGEP Certificate in Education Elementary programs.

Faculty Programs

Transfer credit in these programs is not normally advisable because of the Provincial requirement to complete 30 credits of study for scolarité purposes. However, where transfer credit is appropriate students should first obtain the recommendation of the Program Director concerned.

GRADUATION REQUIREMENTS

BACHELOR OF EDUCATION PROGRAMS

To be eligible for a degree, a student must have accumulated 90 approved course credits (i.e. passed courses whose credit total is 90), obtained a C grade or better in the teaching option(s) and related method(s) courses, and have a CGPA of at least 2.0.

A student must remain in a position to complete the degree requirements within five years of admission to a 90-credit program, otherwise the student reverts to unsatisfactory standing.

Mature students and others admitted to programs requiring the completion of 120 credits must complete degree requirements within six years. Students registered in the B.Ed. for Certified Teachers are allowed a maximum of 12 years in order to meet degree requirements.

McGILL DIPLOMA IN EDUCATION AND CERTIFICATE IN EDUCATION PROGRAMS

To obtain a clear Pass

(i) Students must have a satisfactory standing in student teaching.

(ii) Students in the secondary school option are permitted one D grade (exclusive of student teaching).

(iii) Students in the elementary option are permitted two D grades (exclusive of student teaching).

(iv) Students are not permitted any F grades.

Failed Standing

A student who fails more than two courses (either full or half course), fails the year. When a student's record includes one or more failures and one or more D's, so that the total number of failures and D's is more than two, the Committee on Admission, Standing and Promotion may recommend that such a student fails the year.

Supplemental Privileges

A student may be permitted to write a maximum of two supplemental examinations (either full or half course) in order to meet the criteria for a clear pass. In courses not evaluated by examination, a supplemental examination is not usually available. In such cases, it may be necessary for the student to repeat the course or to meet such other requirements as the Committee on Admission, Standing and Promotion may propose.

Faculty Programs

Quebec Diploma in Special Education
Quebec Diploma in Reading Instruction
Quebec Educational Media Diploma
Quebec Kindergarten Diploma
Certificate in Second Language Teaching
Certificate in Technical-Vocational Education

Satisfactory completion of the 30 credit program will qualify the student to apply for the appropriate Certificate or Diploma. However, in cases where a Diploma is issued by the Quebec Department of Education the student must also meet the prerequisite qualifications as determined by Quebec.

Time Limits

30-credit programs taken on a part-time basis must normally be completed within five years of admission to the program. Programs taken on a full-time basis must normally be completed within 28 months of admission to the program.

Student Teaching (Practicums)

In programs where there is a compulsory practicum (field experience/student teaching) a satisfactory Pass ('P' or 'C' grade or higher) is required. If a student fails this component of the program the student will be required to withdraw from the program, but may appeal for readmission to the Committee on Admission, Standing and Promotion. Satisfactory progress in the student's course work is a prerequisite for placement in the Practicum.

Grading

Students are required to obtain a 'C' grade or higher in all compulsory core subjects and may not include more than one 'D' grade (not exceeding 4 credits) in the elective courses. Students who obtain no more than two 'D' or 'F' grades (not exceeding 8 credits) may be permitted to write supplemental examinations if they are offered and/or repeat the course. Students may repeat failed courses only once. Failures and inadmissible 'D' grades must normally be removed from the record within 16 months of terminating the original course.

NOTE: Faculty Regulations lie within the jurisdiction of the Faculty Committee on Admission, Standing and Promotion. Inquiries concerning their meaning or application should be addressed to the Chairman of the Committee.

6 GENERAL INFORMATION

6.1 FEES AND OTHER EXPENSES

The University reserves the right to make changes without notice in the published scale of fees.

Fees are not refundable, except under special conditions. See "Regulations Concerning Withdrawal" below.

Tuition fees are based on a per credit charge where applicable and on the basis of equivalences where the credit system does not apply. The basic charge for tuition fees is $19.00 per credit and this fee will include all the regular charges of the University for registration, tuition, laboratories and libraries. Student Services Fees and Students' Societies Fees are separately assessed and are added to the total fees payable.

Students enrolled in the 1-year Diploma or Certificate programs are not assessed on a credit system but will be charged a total fee of $668.00 for the year ($570.00 for tuition plus $70.00 for student Services plus $28.00 for Student Societies.)

Students enrolled in the Bachelor of Education degree programs will be assessed according to the credit system. With a fee of $19.00 per credit, a student taking a normal academic load of 30 credits will pay $570.00 (30 X $19.00) for tuition plus fees for Student Services and Student Societies. Students taking more or less than the normal 30 credit load will be assessed fees on a pro rata basis. Thus, a B.Ed. student enrolled in only 24 credits will pay $456.00 (24 X $19.00) for tuition plus the normal fees for Student Services and Student Societies. A B.Ed. student with permission to accelerate and enrolled in 36 credits will pay $684.00 (36 X $19.00) for tuition plus normal fees for Student Services and Student Societies.

SCHEDULE OF FEES

Application Fee (all students)	$15.00
Supplementary Examination Fee	$10.00
Graduation Fee (Degree students only)	$10.00
Special Fees and Penalties:	
See *General Announcement*	
Per Credit Tuition Fee	$19.00
Student Services Fee (all full-time students)	$70.00
Student Societies Fee	$28.00

	TUITION
McGill Diploma in Education	$570.00
Certificate in Education	570.00
B.Ed. (30 credits p.a.)	570.00

PART—TIME, SPECIAL AND VISITING STUDENTS

Where the credit system is applicable $19.00 per credit for tuition will be assessed. Otherwise the tuition fee will be $114.00 per full course and $57.00 per half course.

In addition, the following per term charges will apply for Student Services and Student Societies:

0 — 4.5	$ 5.00		$ 5.00
5 — 8.5	$10.00		$ 5.00
9 or over	$17.50	(excludes athletics)	$14.00

REGULATIONS FOR PAYMENT OF FEES

Students entering the University for the first time and those returning in Graduate Studies are required to pay their fees either by mail or in person at the Accounting Office within 10 days after registration. For students registering in September the second instalment is due before January 15.

Returning students from the previous year (except in Graduate Studies) must pay one half of the total required fee by mail or in person to the Accounting Office before August 23, otherwise they will not be permitted to register. Instructions for paying fees in advance will be mailed to all returning students, either with their Sessional Reports of Standing or a short time later. Students who have been notified by the University of the award of a scholarship, bursary or student loan, and who require this award for payment of the first instalment of fees, must obtain permission to delay payment of fees from the Student Aid Office.

The second instalment is due by January 15. A late payment fee is charged for payment after the specified dates.

LATE REGISTRATION

Students registering late must pay their fees at the time of registration, failing which they become subject to the late payment fee and the provisions of the following paragraph.

As soon as possible after the prescribed dates for the payment of fees, the Chief Accountant will send to the Registrar's Office a list of the registered students who have not paid their fees. Reports of standing, transcripts of records and diplomas will be withheld until such time as the fees are paid or a satisfactory arrangement is made with the Chief Accountant.

STUDENT SERVICES	STUDENT SOCIETIES	TOTAL
$70.00	$28.00	$668.00
70.00	28.00	668.00
70.00	28.00	668.00

REGULATIONS CONCERNING WITHDRAWAL

A student who wishes to withdraw from the University or from certain courses must secure the permission of the Associate Dean (Student Affairs). The Office of the Associate Dean will supply the necessary form which must be completed and submitted. Students withdrawing from all their courses must attach their Student Identity Card to the withdrawal form. A student considering withdrawal is strongly advised to consult his Adviser before making a final decision. Fees for the term in which the student withdraws are refundable under conditions outlined in the *General Announcement.*

PHYSICAL EDUCATION STUDENTS

An additional fee is charged to cover part of the costs of the Outdoor Education Course. Those students who elect curling or skiing are also required to pay additional fees.

BOOKS

Students should expect to spend about $75.00 a session for prescribed textbooks and for classroom and laboratory supplies, all of which may be purchased from the McGill University Bookstore at 1001 Sherbrooke St. W.

TRAVELLING EXPENSES

Students enrolled in programs leading to Quebec Teacher Certification are required to participate in student-teaching and/or internship in the schools. Although every effort will be made to place a student within reasonable travelling distance, this cannot be guaranteed in every case. Students are responsible for any travelling expenses which may be incurred.

BOARD AND RESIDENCE

See *General Announcement.*

ENTRANCE SCHOLARSHIPS

In general, the University's system of entrance scholarships is designed to enable good students from all parts of Canada to attend McGill. The policy of the University is to recognize and honour scholarship, and the University Scholarships Committee selects scholarship winners from among those students who have obtained or who expect to obtain a first class academic standing. See the *Undergraduate Scholarships and Awards Announcement for further details.*

AWARDS TO STUDENTS IN COURSE

See *Undergraduate Scholarships and Awards Announcement.*

FINANCIAL AID

Information concerning all matters relating to financial assistance, whether University, Provincial or Federal, may be obtained from the Student Aid and Foreign Student Adviser Office. This office also deals with all matters which may affect non-Canadian students.

Location: 3465 Peel Street
General Information: 392-5256

Education students entering Technical-Vocational programs should apply directly to the Program Director, Technical-Vocational Education when they submit their applications.

6.2 HEALTH AND COUNSELLING SERVICES

UNIVERSITY HEALTH SERVICES

Location: 517 Pine Avenue West
Appointment and General Office: 392-5441
Mental Health Services: 392-5449

When students enroll at McGill University they have available to them a full range of medical service provided by the McGill University Health Service. Medical clinics operate daily, five days of the week from 9:00 a.m. — 5:00 p.m. A physician is always on call at night and on weekends and he can be contacted by dialing the Health Service number. There are both male and female physicians on staff as well as a competent staff of college health nurses.

The service is available to all full-time students, undergraduate and post-graduate. Students are asked to bring their Medicare cards or equivalent. All information is completely confidential and forms no part of any University record.

Please refer to the *General Announcement* for further details.

OFFICE OF THE DEAN OF STUDENTS

The Dean of Students has the responsibility for the provision of and the coordination of all student services and works closely with the Students' Society in the interests of all students. The Office of the Dean of Students maintains an "open-door" policy and students are invited to make use of these services at any time.

Location: 3465 Peel St.
General Information: 392-5364

STUDENT COUNSELLING SERVICE

This office provides a place where students of all faculties may discuss any problem confidentially. Among the services offered are individual and group counselling, human sexuality clinic, human awareness groups, psychological assessment, vocational testing, effective reading and study skills courses, educational and career planning and the Career Information Library. The service is free to all McGill students.

Location: 522 Pine Avenue West
General Information: 392-5119
Hours: 9:00 a.m. — 5:00 p.m.

EDUCATION COUNSELLING CENTRE

Location: Room B-133
Faculty of Education
3700 McTavish Street
Telephone: 392-8889 or 392-8882

Open between the hours of 9:00 a.m. — 5:00 p.m. weekdays or in the evenings by special appointment.

The Department of Counsellor Education at McGill University provides free counselling services at their Counselling Centre. These services include educational and vocational counselling, counselling for social adjustment and emotional problems, group counselling, testing, and referral to other agencies.

The policy of the Counselling Centre is directed toward providing a place for individuals to discuss their vocational, personal, and educational problems in a confidential, understanding atmosphere. The director and his staff have the belief that any concern that one may have is worth listening to and discussing.

6.3 MISCELLANEOUS

CERTIFIED TRANSCRIPTS OF STUDENT'S RECORD

Transcripts of academic results may be procured from the Registrar's Office on application. The charge for this service, which is payable in advance, is $1.00 each for the first two, and twenty-five cents for each additional copy made at the same time.

QUEBEC TEACHER CERTIFICATION

(The following is provided for general information purposes only. To the best of our knowledge the information was correct as at press time but is subject to change. For comprehensive and further information please refer to the relevant Statutes

Teacher Certification in Canada is a Provincial responsibility. McGill University offers approved programs which the Government of Quebec accepts for initial Teacher Certification.

These programs are:

McGill Diploma in Education
Certificate in Education
Bachelor of Education

Upon satisfactory completion of one of the approved programs, the Government issues a "Permit to Teach" showing the level and area of concentration. This "Permit to Teach" is normally valid for five years. If the holder of such a Permit requires a permanent Teaching Diploma valid in Quebec, he must complete two years of satisfactory teaching in Quebec during the validity of the Permit. If the holder of such a Permit or of a permanent Diploma wishes to teach in another Province or in another country he must apply directly to the Teacher Certification Agency in the relevant Province or Country. Similarly, teachers from other Provinces or Countries who wish to teach in Quebec must apply to the competent authorities in Quebec:

Teacher Certification & Probation Service,
275 rue de l'Eglise
Quebec, P.Q. G1R 6G7

In order to be eligible for a "Permit to Teach" candidates must be either Canadian Citizens, or Landed Immigrants, or must possess a Work Permit. To be eligible for a permanent Quebec Diploma it is necessary to be a Canadian Citizen.

In addition to meeting these requirements, candidates for Teacher Certification must be recommended by McGill University in each of the following areas:

1. Adjustment of the personality for teaching
2. Command of the language of instruction
3. Theoretical knowledge in the field of psychopedagogy
4. Aptitude as a classroom practitioner
5. Academic competency in the area of concentration
6. Understanding of the Quebec educational system

Regulation No. 4 of the Quebec Department of Education "Respecting the Permit and the Licence to Teach" was approved by an Order-in-Council Number 592, March 30, 1966, and is reproduced below:

1. Authorization to teach at the levels of study governed by the regulations of the Minister of Education shall be awarded by the Minister and shall first be in the form of a permit to teach and later in the form of a licence to teach.
2. The permit to teach shall be awarded to every candidate who, after the thirteenth year of study or its equivalent, has successfully completed an approved training program at a recognized institution.

The duration and the nature of this program shall vary according to the level and the area of teaching selected by the candidate.

However, this program shall include, at the minimum, one year or the equivalent of psychology, teaching methods and classroom practice.

3. The permit shall be valid for a period of five years. It shall confer the right to teach during any two of these five years in an institution recognized for the purposes of the present regulation. Under exceptional circumstances, this right may be extended for one year.
4. The licence to teach shall be awarded to the holder of a permit who, having taught for two years in accordance with section 3, is deemed competent.

5. For the application of the present regulation, the Minister of Education shall appoint a Teacher Education Committee which he shall consult regarding the matters enumerated in section 6.

The members of the committee shall be appointed for a definite period. One-third of the members shall be appointed after consultation with the most representative of teachers' associations or organizations, one-third shall be appointed after consultation with institutions at which approved teacher-education programs are provided.

6. Subject to the provisions of section 28 of the Superior Council of Education Act, the Teacher Education Committee shall be responsible for recommending to the Minister criteria relative to the following matters:

   a) The recognition of institutions at which the holder of a permit may teach;
   b) The supervision of the teaching performance of the holder of a permit to teach;
   c) The competence which the holder of a permit must demonstrate in order to obtain a licence to teach and the manner of evaluation of this competence;
   d) The suspension or revalidation of a licence to teach;
   e) The approval of teacher-education programs;
   f) The recognition of institutions at which teacher-education programs are provided;
   g) Refresher courses for teachers and the upgrading of their qualifications.

The committee shall also be responsible for making recommendations concerning the nomenclature and terminology of permits and licences to teach.

7. The holder of a teaching diploma granted under former regulations shall retain the rights conferred by such diploma.
8. The present regulation shall come into force, in whole or in part, on the dates to be determined by the Minister.

LIBRARY AND CURRICULUM LABORATORY

The Education Library, located on the first floor of the Faculty of Education Building, has a collection of approximately 100,000 books, journals, microfilm and microfiche on Education and related subjects, as well as books on subjects taught in schools. The Curriculum Laboratory, adjoining the Library, has about 30,000 items including school text books, a collection of children's literature and audio-visual materials such as film strips, overhead transparencies, records, cassette tapes, kits, and pictures. A mini drop-in centre consisting of 24 carrels with a variety of audio visual equipment provide viewing, recording and listening facilities for modular courses. Previewing of teaching aids is also done in this section of the Lab.

There is a Physical Education library in the Currie Gymnasium stocking books and journals on games, calisthenics, health and other related topics.

Education Library Hours

Monday to Friday (8:30 a.m. — 10:00 p.m.)
Saturday (8:30 a.m. — 1:00 p.m.)

Curriculum Laboratory

Monday to Friday (9:00 a.m. — 5:00 p.m.)

Physical Education Library

Monday and Wednesday (8:00 a.m. — 8:00 p.m.);
Tuesday, Thursday and Friday (8:00 a.m. — 4:15 p.m.)

Education students may use the main Library, McLennan, the Redpath Undergraduate Library as well as other McGill branch libraries. However hours may differ, in different libraries. Refer to the *General Announcement* for further details.

EDUCATIONAL MEDIA CENTRE

The Educational Media Centre exists to serve both students and staff in their requirements for media service or instruction within the Faculty of Education. Service functions include: equipment distribution; preparation of instructional materials; television recording and playback; consultation. Teaching functions include: small group media workshops; equipment operation instruction; micro-teaching; and consultation. The Centre also offers credit courses which include: Introduction to Educational Media; Film Production; Educational Television. The Centre is located on the first floor of the Faculty of Education building.

READING CENTRE

The McGill Reading Centre is a training facility for the Faculty of Education Graduate Program in Reading Education. It is located on the B1 level of the Faculty of Education building. From October to March and during the summer session, the Centre serves the general community as a referral, diagnostic and remedial education facility. The Centre also provides college-level speed and study skills courses for McGill students (and others at fee). School personnel are welcomed as visitors. Visitation to schools for consulting on programs or specific problems may also be available.

During the summer, the Reading Centre operates a reading instruction program in a local elementary school. Information may be obtained by calling 392-8888.

STUDENT PLACEMENT — CANADA MANPOWER CENTRE

Location: 762 Sherbrooke St. W.
Telephone: 283-4411

The Student Placement Office, in cooperation with the School Boards wishing to participate, arranges for the distribution of application forms for teaching posts and also schedules an Interview Day, usually

in April, when School Boards may interview prospective Education graduates. The office also distributes Registration Forms for the Quebec Teacher Placement Bureau. A number of School Boards regularly inform the Placement Office of teaching vacancies. All potential and recent graduates are encouraged to make full use of the centre's services.

THE McGILL JOURNAL OF EDUCATION

The Journal of Education is published twice a year, in the Spring and Fall. Subscription rates for students: 3 years — $4.50 Single copies — $2.50. Subscriptions, payable to the McGill Journal of Education, should be addressed to the Circulation Department, McGill Journal of Education, 3700 McTavish Street Montreal Quebec, H3A .1Y2, Canada.

EDUCATION UNDERGRADUATE SOCIETY

The Education Undergraduate Society, located beside the cafeteria, in room B185, is the students' voice within faculty. The Society's primary purpose is to serve and to inform the students. It also attempts unification of students through sponsorship of activities, such as:

the tutoring program (students teaching in underprivileged areas)
Teachers' Convention
Conference participation
Intramural athletics
and many more.

We encourage you to get involved. Make your opinions known. Drop by B185 or call 392-4448.

POST GRADUATE STUDENTS' SOCIETY

David L. Thomson House is operated by the Post Graduate Students' Society as a social centre for students in the Faculty of Graduate Studies and Research, and for students in the One-Year Diploma Program in the Faculty of Education. It is situated just below the Education Building at 3650 McTavish Street.

7 DEPARTMENTAL STAFF LIST

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M. Jeffery
W. Lawlor

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J. Hodge
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D. Marisi
D. Montgomery
G. Neil
D. Nichol
G. Reid
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M. Walker
A.E. Wall
J.A. Wall

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M. Laferrière
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W. Ryan
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EDUCATIONAL MEDIA

R. Jones, Director
R. Ascroft
A. Pollard
R. Pollard

JEWISH STUDIES

S. Epstein, Director

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McGill University,
P.O. Box 6070, Station A
Montreal, Quebec,
Canada H3C 3G1

Faculty of

ENGINEERING

including School of

ARCHITECTURE

and School of

COMPUTER SCIENCE

1976/77

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McLENNAN LIBRARY

McGill University
Montreal

The University reserves the right to make changes without prior notice to the information contained in this publication, including the alteration of various fees schedules and the revision or cancellation of particular courses.

Students intending to seek membership in a professional corporation in Quebec are reminded that after July 1, 1976 they will be required to show that they possess a working knowledge of the French language, in conformity with the requirements of the Professional Code (Bill 250) and the Official Language Act (Bill 22).

Faculty of

ENGINEERING

including the School of Architecture
and the School of Computer Science

1976/77

Macdonald Engineering Building, McGill Campus
Montreal, Que. Canada
Telephone (514) 392-5880

* The official McGill University mailing address is:
McGill University, P.O. Box 6070, Station A
Montreal, Quebec, Canada H3C 3G1

Table of Contents

1 Administrative Officers and Faculty Committees
2 The Faculty
3 General Information
4 Academic Requirements
5 Academic Programs
6 Choice of Electives
7 Change of Course Numbers
8 Index

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CALENDAR FOR SESSION 1976 — 1977

1976

Sept. 2, Thurs. and Sept. 3, Fri.	Pre-registration student counselling
Sept. 7, Tues.	Registration in the Faculty of Engineering. 8:30 a.m. — 12 noon (A to L), 2 p.m. — 5 p.m. (M to Z)
Sept. 13, Mon.	Lectures begin in the Faculty of Engineering.
Sept. 28, Tues.	Late registration in all Faculties.
Oct. 1, Fri.	Last day for fall term course changes.
Oct. 11, Mon.	Thanksgiving. Lectures cancelled.
Nov. 9, Tues.	Fall Convocation.
Nov. 19, Fri.	Last day for withdrawal from A courses.
Dec. 10, Fri.	Last day of fall term lectures in the Faculty of Engineering.
Dec. 13, Mon. to Dec. 23, Thurs.	Examinations in fall term courses in the Faculty of Engineering and Management

1977

Jan. 4, Tues. to Jan. 14, Fri.	Examinations in fall term courses in all programs in Arts, Science and Education.
Jan. 14, Fri.	Winter term registration for new students in Arts, Science, Education, Engineering, and Management.
Jan. 17, Mon.	Winter term lectures begin in the Faculty of Engineering.
Jan. 28, Fri.	Last day for winter term course changes.
Feb. 11, Fri. and Feb. 12, Sat.	Mid-term weekend holiday (Montreal Campus) Lectures cancelled.
Mar. 25, Fri.	Last day for withdrawal from B courses.
Apr. 8, Fri. to Apr. 11, Mon.	Easter. Administrative offices will be closed from 5:00 p.m. on Thursday, April 7, to 9:00 a.m., Tuesday, April 12.
Apr. 15, Fri.	Last day of lectures in the Faculty of Engineering.
Apr. 18, Mon. to May 6, Fri.	Examinations in all programs in the Faculties of Arts, Science, Education, Engineering and Management.
May 23, Mon.	Victoria Day. Administrative Offices will be closed.
June 7, Tues, and June 8, Wed.	Convocations

The Faculty has renumbered most of the courses it offers as of July 1, 1976. A detailed list of old course numbers and the equivalent new numbers may be found in Section 7.

1 ADMINISTRATIVE OFFICERS AND FACULTY COMMITTEES

1.1 ADMINISTRATIVE OFFICERS

ROBERT E. BELL, C.C., B.A., M.A.(U.B.C.), Ph.D.(McG.), D.Sc.(U.N.B.,Laval), LL.D.(Tor.), F.R.S., F.R.S.C. **Principal and Vice-Chancellor**

EIGIL PEDERSEN, B.A. (Sir G. Wms.), M.A. (McG.), Ed.D.(Harv.) **Vice-Principal (Academic)**

LEO YAFFE, B.Sc., M.Sc.(Man.), Ph.D.(McG.), F.C.I.C., F.A.P.S., F.R.S.C. **Vice-Principal (Administration)**

ALLAN C. McCOLL, D.F.C., B.Com.(McG.), C.A. **Vice-Principal (Finance)**

WALTER F. HITSCHFELD, B.A.Sc.(Tor.), Ph.D.(McG.), F.R. Met.S. **Vice-Principal (Research)**

COLIN M. McDOUGALL, D.S.O., B.A.(McG.) **Secretary-General**

JEAN-PAUL SCHULLER, B.A.(Ott.) **Registrar**

PEGGY SHEPPARD, B.Ed.(McG.), B.A.(Sir G.Wms.) **Director, Admissions Office**

2.1 MEMBERS OF FACULTY

GERALD W. FARNELL, B.A.Sc.(Tor.), S.M.(M.I.T.), Ph.D.(McG.), Eng., F.I.E.E.E. **Dean**

WILLIAM BRUCE, B.A.Sc., M.A.Sc.(Tor.), Eng., M.E.I.C., M.A.S.M.E. **Associate Dean, Student Affairs**

WILLIAM G. DAVENPORT, B.A.Sc., M.A.Sc (U.B.C.), Ph.D.(Lond.), D.I.C., Eng., M.C.I.M. **Associate Dean, Academic**

TOMAS J.F. PAVLASEK, B.Eng., M.Eng., Ph.D.(McG.), Eng., M.E.I.C., M.C.S.E.E., S.M.I.E.E.E. **Associate Dean, Planning and Development**

DEREK DRUMMOND, B.Arch(McG.), M.R.A.I.C. **Acting Director, School of Architecture**

GEORGE MARSAGLIA, B.Sc.(Colorado), Ph.D.(Ohio State) **Director, School of Computer Science**

W.J. MURRAY DOUGLAS, B.Sc.(Qu.), M.S.E., Ph.D.(Mich.) M.C.S.Ch.E., F.C.I.C. **Chairman, Department of Chemical Engineering**

RICHARD G. REDWOOD, B.Sc.(Eng.) (Bristol), M.A.Sc.(Tor.), Ph.D.(Bristol), Eng. M.I.C.E., M.C.S.C.E. **Chairman, Department of Civil Engineering and Applied Mechanics**

PEET SILVESTER, B.S.(Carnegie), M.A.Sc.(Tor.), Ph.D.(McG), Eng., M.I.E.E.E., M.S.I.A.M. **Chairman, Department of Electrical Engineering**

JULES W. STACHIEWICZ, B.Eng., M.Eng.(McG.), Eng., M.A.S.M.E., M.C.S.M.E. **Chairman, Department of Mechanical Engineering**

WILLIAM M. WILLIAMS, B.Sc., M.Sc.(Bristol), Ph.D.(Tor.), Eng., M.C.I.M., M.I.M. **Chairman, Department of Mining and Metallurgical Engineering**

P.J. HARRIS, B.Eng.(Man.), M.Eng., Ph.D.(McG.), Eng. **Secretary of Faculty**

IDA GODEFROY **Administrative Assistant to the Faculty**

1.2.1 Emeritus Professors

LOUIS JOSEPH ARCAND, B.Sc., M.Eng.(McG.), Eng., Q.L.S., M.C.I.S., M.A.S.P. **Emeritus Professor of Civil Engineering.**

FREDERICK STANLEY HOWES, B.Sc., M.Sc.(McG.), Ph.D.(Lond.) D.I.C., Eng., F.I.R.E. **Emeritus Professor of Electrical Engineering.**

JOSEPH L. deSTEIN, B.Sc.(Sask.), M.Eng.(McG.), M.E.I.C. **Emeritus Professor of Civil Engineering.**

ROBERT G.K. MORRISON, B.A.Sc.(Tor.), Eng., M.C.I.M., M.A.I.M.E. **Emeritus Professor of Mining Engineering.**

1.3 STANDING COMMITTEES OF THE FACULTY

ACADEMIC COMMITTEE

Associate Dean (Academic) (Chairman), Professors J.E. Gruzleski, M.R. Kamal, M.D. Levine, T.H. Merrett, M.P. Paidoussis, S.B. Savage, R. Zuk.

Student Members: Three undergraduate students, to be named.

COMMITTEE ON ADMISSION TO UNDERGRADUATE PROGRAMS

Associate Dean (Student Affairs) (Chairman), Professors D. Drummond, J.C. Osler

COMMITTEE ON ADVANCED STUDIES

Professor R.I. Guthrie (Chairman), Professors P. Bélanger, J.-M. Charrier, P.J. Harris, B. C. Paige, J. Provan

Student Members: Two graduate students, to be named.

AGRICULTURAL ENGINEERING COMMITTEE

Professor J.R. Ogilvie (Chairman), Professors P.H. Schuepp, R.S. Broughton from the Faculty of Agriculture; Professors J.M. Forde, R.D. Japp, M.E. Weber from the Faculty of Engineering.

COMMITTEE ON COLLEGE AND SCHOOLS LIAISON

Professor E.L. Adler (Chairman), Professors D.J. Burrage, J. Dealy, C. Murphy, P. Sijpkes, G. Thomas, W.T. Thompson. The Associate Dean (Student Affairs) and the Director of College and Schools Liaison, ex-officio.

Student Members: Two undergraduate students, to be named.

HONORARY DEGREES COMMITTEE

The Dean (Chairman), Professors J. Bland, G.L. d'Ombrain, J.W. Stachiewicz, W.M. Telford

Student Members: One undergraduate and one graduate student, to be named.

LIBRARY COMMITTEE

Professor S.B. Savage (Chairman), Professors T. Boyle, J.H. Lee, M.D. Levine, T.H. Merret, W.T. Thompson.

Student Members: Two undergraduate and one graduate student, to be named.

NOMINATING COMMITTEE

The Dean (Chairman), Professors W. Bruce, W.G. Davenport, J. Dealy, P.J. Harris, M.D. Levine, C. Paige, R. Zuk.

COMMITTEE ON PHYSICAL PLANNING

Associate Dean (Planning and Development) (Chairman), Directors, Schools of Architecture and Computer Science, Chairman, Engineering Departments, or their delegates, two undergraduate students to be named. The Associate Dean (Academic), ex-officio.

COMMITTEE ON SCHOLARSHIPS, BURSARIES & LOANS

Professor G.W. Smith (Chairman), Professors E.L. Adler, W. Bruce, R.G. Redwood.

COMMITTEE ON STANDING

Associate Dean (Student Affairs) (Chairman), Director, School of Architecture, Chairmen, Engineering Departments. Mrs. M. Brown (ex-officio).

2 THE FACULTY

2.1 HISTORICAL NOTE

The Faculty of Engineering celebrated its centenary during the 1971-72 session. It began operations as the Department of Practical and Applied Science in the Faculty of Arts offering degree programs in Civil Engineering and Surveying, Mining Engineering and Assaying, and Practical Chemistry. Diploma courses had been offered from 1859 and by 1871, the staff and enrolments had increased sufficiently to justify the creation of the Department. Continued growth led to the formation of the Faculty of Applied Science in 1878 and by 1910 there were ten degree programs offered, including Architecture and Railroad Engineering. Subsequent changes in the overall pattern of the University led to the creation in 1931 of the Faculty of Engineering with a departmental structure very similar in name to that which exists at the present time.

2.2 THE FACULTY TODAY

The current structure of the Faculty includes five engineering departments and two schools:

The Departments

Chemical Engineering
Civil Engineering and Applied Mechanics
Electrical Engineering
Mechanical Engineering
Mining and Metallurgical Engineering

The Schools

Architecture
Computer Science

The Faculty serves approximately 1,200 undergraduate students and 400 graduate students with a wide variety of academic programs.

Undergraduate programs leading to professional bachelor degrees are offered in all segments except the School of Computer Science. These programs are designed to qualify the graduates for immediate employment in a wide range of industries and for membership in the appropriate professional bodies. Additionally, a non-professional degree is offered in the School of Architecture for those who plan to work in related fields not requiring professional qualification. The curricula are also structured to provide suitable preparation for those who plan to continue their education in post-graduate studies either at McGill or elsewhere.

The academic programs, which are described in detail in Section 5, are divided into a core and an elective section. The core programs emphasize those unchanging basic principles which permit our graduates to keep abreast of progress in technology throughout their careers. Exposure to current technology is provided by the wide variety of technical elective courses which allow our students to pursue in depth a particular field of interest. Free electives provide the opportunity for study in non-technical fields. The Faculty recognizes the managerial functions of a large proportion of engineers and maintains a close liaison with the Faculty of Management. A Sub-program in Management has been established as described in Section 6.

Post-graduate programs leading to master's and doctoral degrees are offered in all sectors of the Faculty. Numerous areas of specialization are available in each of the departments and schools. All post-graduate programs are described in the Announcement of the Faculty of Graduate Studies and Research.

The School of Computer Science concerns itself with a broad range of activities associated with the design, operation and application of computer facilities. A variety of courses appropriate to these areas is available to undergraduates. Specialized degree programs are offered only at the post-graduate level following undergraduate studies in engineering, mathematics or certain branches of science. Guidance in the choice of Computer Science electives is given in Section 6.

2.3 SPECIAL FACILITIES AND RELATED PROGRAMS

2.3.1. McGill Computing Centre

The Computing Centre, located in Burnside Hall, is organized to provide digital computer service for research and instructional purposes, within the University. The equipment installed comprises an IBM System 360 Model 75 and an IBM System 370 Model 158 computer. The 360/75 provides batch processing from both local and remote locations, including a card reader and line printer in the McConnell Engineering Building. The 370/158 is operated as a remote access system, providing interactive computing from typewriter terminals installed at many locations on campus.

All engineering undergraduate students receive an introductory course in computing in the early stages of their studies and subsequently use the computer for the solution of engineering problems in other courses. Post-graduate students and staff use the facility extensively for research purposes.

2.3.2 Brace Research Institute

The Brace Research Institute of the Faculty of Engineering was founded in 1959 by the generosity of Major Brace to investigate ways of helping people in arid zone areas. The Institute has concentrated on problems affecting individuals and small communities.

The operation is in two parts. The research activity is aimed at developing appropriate technology for eventual use in a manner which will utilize local resources of material and human energy to better the living conditions of family units. The present areas of research are concerned with solar energy, wind energy and energy from biomass. A solar-powered closed cycle engine for pumping water and generating electricity is being evaluated. The transformation and storage of solar energy in the form of heat is being studied in four housing units. New designs of windmill and windmill-to-pump transmissions systems have been evolved. A start on the study of biogas generation and storage has been undertaken in collaboration with Macdonald College.

The second part, known as the Field Operation, with headquarters at the Macdonald campus, exists to advise governments and communities on technology appropriate to their needs and within the accumulated expertise of the Institute. This expertise currently relates to solar desalination plants, solar heaters, cookers and crop dryers, wind energy, storage of heat in solar ponds, and the design of greenhouses to improve the energy relationships and to conserve water.

2.3.3 Mineral Industry Research Institute

This institute which was established at Mont St. Hilaire by the Department of Mining and Metallurgical Engineering has excellent facilities for the study of noise, vibration, heat, cold, dusts, illumination and other physico-chemical agents encountered in the working environment. The program of research covers a wide range of activities and much of the work at the Institute is of an interdisciplinary nature.

2.3.4 Agricultural Engineering

The Faculty of Engineering cooperates with the Faculty of Agriculture in providing courses of instruction for a curriculum in Agricultural Engineering to *meet requirements for a degree awarded in the Faculty of Agriculture.* The first semester of the penultimate year of the program is given by the Faculty of Engineering on the Montreal campus. Details of the curriculum are given in the *Announcement of the Faculty of Agriculture.*

2.3.5 Biomedical Engineering Unit

Post-graduate training in Biomedical Engineering is supervised in two ways within the Faculty: (i) by the Biomedical Engineering Unit which was formed in 1966 jointly by the Faculties of Engineering and

Medicine to increase cooperative research work in this new but important area, and (ii) by individual staff members working in collaboration with their colleagues in the Faculty of Medicine.

The research interests of the Unit can be classified into two main categories: (i) experimental and theoretical studies of a basic scientific nature such as neuro-muscular control system studies or neural communication theory, (ii) application and development of technology for health care delivery including, for example, the system aspects of hospitals.

Individual staff projects within the Faculty include such topics as ECG analysis, dynamics of blood flow, and pattern recognition applied to aspects of pathology.

Engineering undergraduates or graduates from any specialty who are motivated towards the biological applications of engineering should contact either the Director of the Biomedical Engineering Unit or the Chairman of their department.

2.4 LIBRARY FACILITIES

The University has numerous libraries serving a wide variety of needs. Those specifically serving Engineering and Architecture are the Engineering Library, the Physical Sciences Library, and the Blackader Library of Architecture.

The Engineering Library is located on the Main Floor of the Macdonald Engineering Building. It contains over 33,600 volumes with 776 serial subscriptions. The library serves the Civil Engineering, Electrical Engineering, and Mechanical Engineering Departments, and the School of Computer Science. It has subject collections in Aeronautics, Applied Mathematics, Management, and Soil Mechanics.

The Library is a depository for selected NASA and AGARD publications.

Material on Chemical, Mining and Metallurgical Engineering is available at the Physical Sciences Library which also serves the Departments of Chemistry, Geological Sciences, and Physics and is located in the Frank Dawson Adams Building.

The Blackader Library of Architecture, on the third floor of the Redpath Library, houses approximately 30,000 volumes. The subjects of this collection cover landscape architecture, town planning and urban design, history of architecture, architectural planning, building construction, housing, fine arts, and applied arts. The library subscribes to 210 periodicals in various languages. The Blackader Library has its own Rare Books Department with valuable first editions in the fields of architecture and the fine arts. On the fourth floor of the building is a unique collection of original drawings and photographs of old Canadian architecture.

More details on library services are given in the Engineering Library Handbook available at the Engineering Library circulation desk.

3 GENERAL INFORMATION

3.1 ADMISSION REQUIREMENTS

Admission to the Faculty's undergraduate programs occurs twice per year, at the start of the Fall semester and the start of the Winter semester. It is based on one of the following qualifications:

The diploma of Collegial Studies (DCS or DEC) in the Physical Sciences program at a CEGEP in the Province of Quebec.
or
Appropriate academic qualifications achieved elsewhere.

Canadian applicants from provinces other than Quebec who have completed Grade 12 (Grade 13 Ontario or first year university in Newfoundland) and who have a strong foundation in mathematics (including a course in trigonometry or functions), physics and chemistry may be granted admission to a four year (eight semester) Bachelor of Engineering program.

Enrolment in the School of Architecture is limited and the selection of applicants is based on academic standing. Applicants who are not accepted for Architecture and are qualified for Engineering will be offered admission to a Department of Engineering.

Students having taken courses at another University may apply for admission with advanced standing. A maximum of 40 credits may be allowed towards the B.Eng. degree, 40 credits towards the B.Sc.(Arch.), and 60 credits towards the B.Arch. degree.

MATURE STUDENT ADMISSION

Residents of Canada who will be 23 years of age or older by September 1 (for admission to the Fall Session) or January 1 (for admission to the Winter Session) and who lack the academic background normally required for admission may apply for entrance as mature students.

Individuals interested in being considered for entrance under this policy should contact the Admissions Office for further information.

3.2 APPLICATION

Application should be made to the Director, Admissions Office, McGill University, P.O. Box 6070, Station "A", Montreal, Quebec. H3C 3G1.

Applications for admission to the Fall semester should be received before March 1. Applications after this date will be considered only from Canadian residents and then only if places are available.

Applications for admission to the Winter semester must be received before November 1.

All students in the Faculties of Arts, Science and Management at McGill University and students at Macdonald College of McGill University are eligible to apply for a transfer to the Faculty of Engineering. These students should consult the Student Affairs Office of the Faculty of Engineering.

3.3 REGISTRATION

Registration and late registration dates will be announced; see the Calendar of Dates for the 1976-77 session.

An additional fee of $25 is required for late registration. Applications for remission of this fee will be considered only in cases of illness or other family emergency. Students who are unable to register on the official date and must register late are required to report in person at the Student Affairs Office of the Faculty immediately they commence attending classes.

All students intending to register for elective courses in other Faculties should consult the particular department prior to registration to ensure a place when enrolment is limited, or to be assigned to an appropriate section when necessary.

Students taking courses in the Centre for Continuing Education for credit must report to the Centre, presenting a completed form which is available at the Faculty Student Affairs Office or at the Centre.

Course Changes

A student may change a course for which he has registered provided this is done before the end of the third week of the semester.

Course Withdrawal

A student may withdraw from a course without academic penalty provided he accomplishes this before the end of the tenth week of the semester. Beyond this time his name will appear on the examination lists and, in the event of his not taking the examination, he will be allocated a KF grade (see Section 4.3).

Course Verification

Accurate data is essential to the operation of the Student Record System since the preparation of examination lists and computation of academic standing are done automatically from these records. In the last resort, only the individual student knows if his course record is correct. Accordingly, there is a Course Verification Period each semester during which each student must visit the Faculty Student Affairs Office to verify his record.

3.4 COUNSELLING

New students are required to seek academic counselling about their programs prior to the registration date from the Department in which they plan to study. Additional information may be obtained by calling:

General	392-5860
	392-5878
	392-5880
Architecture	392-5409
Chemical Engineering	392-5432
Civil Engineering	392-5963
Computer Science	392-8275
Electrical Engineering	392-5415
Mechanical Engineering	392-5473
Metallurgical Engineering	392-5706
Mining Engineering	392-5430
Student Aid	392-5258

3.5 FEES

Fees are computed at the rate of $19.00 per credit plus the appropriate Student Services and Student Society's fees. Students should either consult the *General Announcement* or enquire at the Registrar's Office for details.

3.6 STUDENT ACTIVITIES

The campus offers a wide variety of extra-curricular activities for students. All are urged to participate in those of their choice and within the limits of their interests and abilites. Many of these are organized within the Faculty under the auspices of the Engineering Undergraduate Society and/or the Architectural Undergraduate Society. Both of these organizations publish handbooks describing their operations and the activities of various clubs and societies within the Faculty. All undergraduate students automatically become members of the EUS or the AUS, as appropriate.

Student Services

A variety of student services are available. For details see the *General Announcement*.

3.7 ACADEMIC CREDIT TRANSFER AGREEMENT

Regular full-time undergraduate students and regular graduate students registered at McGill may, with the written permission of the Dean of the Faculty, register up to 40% of a full load in each academic year at any Quebec University. These courses; weighted, graded, and successfully completed according to the standards of the university giving the courses, will be fully recognized by McGill for the purpose of the degree for which the student is registered. Students wishing to take advantage of this agreement should consult the Associate Dean (Student Affairs) for details, and are informed that

this agreement is subject to the following conditions:

(i) that courses in the core program must be taken at McGill;

(ii) that the other universities concerned may, at their discretion, refuse the registration of a student for any of their courses or programs;

(iii) that the obligation of the student to follow the curriculum laid down by McGill is not affected;

(iv) that the student is responsible for ensuring that his timetable at McGill permits him to take courses at any of the other universities concerned;

(v) that the universities concerned are not responsible for special arrangements in cases of examination timetable conflict.

Students may take advantage of this agreement by completing the TRANSFER CREDIT form available from the Registrar's Office. This form permits the student to collect the required academic authorizations and that of the Director of Finance; ensures automatic fee transferral from the home university to the host university; and ensures the automatic reporting of marks and credits to the home university.

NOTE: Transfer credits are not calculated in the GPA or CGPA and the grades are not entered on the student's McGill transcript.

3.8 TRANSFER FROM OTHER FACULTIES OR PROGRAMS

Students wishing to transfer from another faculty to the Engineering Faculty may do so after consulting the department in which the student wishes to study. In consultation with the student advisor, credit for certain courses taken in other faculties or in other programs in engineering may be transferred to the new program. The transfer is completed only when the appropriate forms are completed and approved by the Associate Dean (Student Affairs). A maximum of 40 credits may be allowed towards the B.Eng. and B.Sc. (Arch.) degrees, and 60 credits towards the B.Arch. degree.

3.9 SUMMER SESSION

The University operates a Summer Session on an extremely flexible basis to meet the special needs of students. Numerous Arts, Science and Management courses are available and are described in the Summer Session Announcement. The demand for Engineering courses is small so that few are given. These may be arranged to meet special needs and may be too late for insertion in the Summer School Announcement. Students should, therefore, consult the Departments regarding possible courses.

4 ACADEMIC REQUIREMENTS

4.1 QUEBEC SYSTEM OF EDUCATION

Post-secondary education for students proceeding to university degrees in the Province of Quebec is divided into two distinct levels:

(i) a collegial program normally of two years' duration following secondary studies, and

(ii) a university program of a minimum of six semesters' duration following completion of the collegial program.

The programs of the Faculty for the 1976-77 session are presented in the following pages.

4.2 DEGREES AND REQUIREMENTS FOR PROFESSIONAL REGISTRATION

Professional

Bachelor of Architecture
Bachelor of Engineering
Bachelor of Engineering (Honours)

Non-Professional

Bachelor of Science (Architecture)

The B.Eng. programs are fully recognized by the Accreditation Board of the Canadian Council of Professional Engineers and fulfill the academic requirements for admission to the provincial professional organizations. The B. Arch. program is recognized in all provinces as fulfilling the educational requirements for entry to the architectural profession.

Students intending to practice in Quebec should especially note the requirements of the Official Language Act of the Province of Quebec. This has the aim of encouraging the use of French and making French the language of work. It requires that all professionals registering after July 1, 1976, be capable of dealing with the public in French. The university provides numerous courses in French at a variety of levels and aimed at a variety of needs. The course lists of the French Language Centre and the Department of French Language and Literature should be consulted by students interested in furthering their knowledge of French. Students must contact the Centre or Department before registering for their courses.

4.3 STUDENT PROGRESS

The session is divided into two semesters with examinations and evaluation of student progress at the end of each. The course promotion system is

employed. Students are allocated a letter grade for each course taken. Their grade point average is computed as described below from a combination of the grade and the credit assigned to a course.

The basic requirement for the B.Eng. degree is completion, with a cumulative grade point average of 2.00 or better, of a departmental program while registered as a degree candidate. The normal workload is 15 to 18 credits per semester. A minimum of six semesters is required for completion of any program.

The non-professional B.Sc.(Arch.) degree is similarly structured with similar requirements. The professional B.Arch. degree requires a minimum of two additional semesters to complete the program.

A student must successfully complete the B.Eng. or B.Sc.(Arch.) programs within five years of entry. Candidates admitted to a lengthened program, or to a shortened program because of advanced standing, will have a correspondingly greater or lesser period in which to complete. Candidates entering the B.Arch. program must complete the degree requirements within two years. Extensions may be granted by the Committee on Standings in cases of serious medical problems or where other similarly uncontrollable factors have affected a student's progress.

The language of instruction is English, but students may write examinations, reports and essays in French.

Electronic calculators are normally permitted in examinations. Pre-prepared programs may be permitted in certain examinations in which event it is the examiner's responsibility to ensure that no undue advantage accrues to the student employing such programs. Only battery operated calculators are permitted in examinations. Power supplies cannot be provided and it is the student's responsibility to see that the batteries are adequate. Noisy calculators, such as mechanical and electromechanical types, are not permitted.

Letter Grades

A	Very Good
B	Good
C	Satisfactory
D	Conditional Pass
F	Failed
K	Incomplete
KF	Incomplete (failed)
L	Deferred

Grades, A, B and C are permanent grades clearly indicating satisfactory results. Grade D is a permanent grade indicating marginal results which may be acceptable for peripheral courses but not for core courses required by the program. The classification of a course as core or peripheral depends on the individual student's program and will be decided by his department. Grade F is a permanent grade indicating unsatisfactory results. In addition, a student may be assigned categories K, KF and L. Category KF indicates a deficiency which the student must clear in order to receive credit and is calculated as a zero in the grade point average. Upon completion of the course, the KF is replaced by a K and the appropriate grade and the grade point average is recalculated. Category K indicates a delay granted in completion of the course. The L category indicates a deferred grade because of medical or other valid reason. Although the K or L does not influence the grade point average, it remains as part of the student's record though they do not appear on transcripts.

Course Credit

The credit assigned to a particular course reflects the amount of effort it demands of the student. One credit normally represents three hours total work per week. This is in general a combination of lecture hours, other contact hours such as laboratory periods, tutorials and problem periods and personal study. As a guide the average division of time for a course is indicated in hours in the course listing after the course credit. For example 3(3-0-6) indicates a credit of three units consisting of three lecture hours per week, no other contact hours and six hours of personal study per week.

Grade Point Averages

Letter grades are assigned grade points according to the scheme A = 4, B = 3, C = 2, D = 1, F = 0, KF = 0. Categories K and L are excluded from the calculation of the grade point average which is defined by the ratio

$$\frac{\Sigma \text{ (course credit x grade points)}}{\Sigma \text{ (course credits)}}$$

Summation over all courses taken in one semester gives the semestrial grade point average (SGPA) while summation over all courses taken since entry into the program gives the cumulative grade point average (CGPA). All results are included when courses are taken more than once. Any courses taken which lie outside the program are classified as extra and do not affect the grade point average.

Standings

A student's standing is based on his CGPA according to the following criteria.

Satisfactory standing:
2.00 or better

Probationary standing:
1.20 - 1.99 first semester
1.50 - 1.99 subsequent semesters

Unsatisfactory standing:
less than 1.20 first semester
less than 1.50 subsequent semesters

Candidates in satisfactory standing may proceed with the following conditions:

(i) All core courses in which D or F grades were obtained must either be repeated successfully

(grades A, B or C) or be replaced by an alternative approved course which is completed successfully.

(ii) All other courses in which F grades were obtained must either be repeated (grades A, B, C or D) at some point before graduation or be replaced by some alternative approved course which is completed successfully before graduation.

Candidates in probationary standing may proceed for one semester under the same conditions noted above but, in addition, must reduce their load to a maximum of 13 credits per semester and must achieve at the end of the semester either a CGPA of 2.00 or better or an SGPA of 2.50 or better. A student whose SGPA is 2.50 or better but whose CGPA is less than 2.00 may continue on probationary standing.

Candidates with unsatisfactory standing must withdraw for at least one semester, after which they may be considered for readmission by the Committee on Standings.

Repeated Courses

A student who fails to achieve the required results in a course must successfully repeat either it or a substitute course approved by his department. For students who fail prerequisite courses which are offered in only one semester, the departments responsible may, in appropriate cases, arrange 'reading courses' during the other semester or during the summer months. Such courses taken during a regular semester constitute a normal part of the candidate's work load which must be reduced correspondingly in the rest of its content.

Reassessment of a Grade

A student may request the reassessment of a grade by applying in writing to the Associate Dean of Student Affairs within three months of the date of the examination. Payment of the $10 fee must be enclosed with the application. If the grade is improved as a result of the reassessment the fee is refunded.

4.4 COURSE NUMBERING SYSTEM

Detailed curricula are listed in the next section under the appropriate school or department. In each case, the courses are grouped under four categories which are common to all programs:

(1) required courses in subjects taught outside the department
(2) required courses in subjects taught inside the department
(3) elective courses in technical subjects to be selected according to rules which vary somewhat from department to department, and
(4) elective courses of a general nature which permit the student to extend his education in areas of relevant personal interest.

A core program comprises all required courses. The course numbers indicate the department of origin by the first three digits as follows:

Science Departments

180 — Chemistry
186 — Geology
189 — Mathematics
198 — Physics

Engineering Departments

300 — Faculty (non-departmental)
301 — Architecture
302 — Chemical Engineering
303 — Civil Engineering and Applied Mechanics
304 — Electrical Engineering
305 — Mechanical Engineering
306 — Mining and Metallurgical Engineering
308 — Computer Science

The fourth digit in course numbers indicates the level of the course as follows:

OXX — Courses without credit
1XX — Pre-engineering level courses
2XX — Normally taken in the first year
3XX — Normally taken in the second year
4XX — Normally taken in the final year
5XX — Graduate level courses which may be Taken as final year electives.

The terminal letters indicate the semester(s) in which the courses are given, i.e. A - Fall, B - Winter, C - Summer, D - Fall and Winter, F - An assignment or project accomplished in the summer but reported in the Fall, X - Fall evening, Y - Winter evening

Where asterisks appear with a prerequisite, they have the following significance:

* a D grade is acceptable for prerequisite purposes

** under special circumstances, the Department may permit this course to be taken as a co-requisite.

• elective courses

The curricula and courses described in the following pages have been approved for the 1976/1977 session but the Faculty reserves the right to introduce changes as may be deemed necessary or desirable.

5 ACADEMIC PROGRAMS

5.1 THE FACULTY OF ENGINEERING

Dean
Gerald W. Farnell, B.A.Sc.(Tor.) S.M.(M.I.T.), Ph.D.(McG.), Eng., F.I.E.E.E.

Associate Deans
Student Affairs
William Bruce, B.A.Sc., M.A.Sc.(Tor.), Eng., M.E.I.C., M.A.S.M.E.

Academic
William G. Davenport, B.A.Sc., M.A.Sc.(U.B.C.), Ph.D.(Lond.), D.I.C., Eng., M.C.I.M.

Planning and Development
Tomas J.F. Pavlasek, B.Eng., M.Eng., Ph.D.(McG.), Eng., M.E.I.C., M.C.S.E.E., S.M.I.E.E.E.

Associate Professor in Engineering Practice
John T. Woolsey, B.A.Sc.(Tor.), M.A.(Sir G.Wms.), M.E.I.C.

Special Lecturer in Engineering Law
Nat Salomon, B.A., B.C.L.(McG.)

A number of faculty courses are offered. These courses are elective and are of a more general nature than the departmental courses.

300-211A ECONOMIC ENVIRONMENT 3(3-0-6). Theory of prices. Theory of the firm. Public finance. The banking system. National income. Employment. Labour relations. Inflation. Poverty. Economic growth. Regional economic problems. Engineering applications of micro-economics. Influence of micro-economics on engineering decisions.
Professor Woolsey

300-220A ENGINEERING LAW 2(2-0-4). Definition of law; different branches of law; distinction between civil and criminal law and between civil and common law; statutes, orders in council, and by-laws; Canadian constitutional law and organization of courts; civil law including marriage, tutorship, minority, and interdiction, types of property, rights of ownership, successions, wills and succession duties, expropriation, servitudes, obligations, responsibility for negligence, Workmen's Compensation Act, privileges, hypothecs, registration, prescription, marriage contracts and rights of women, sale, lease and hire, mandate, engineering and architectural contracts. Responsibility of architect and builder; organization of engineering and architectural professions; patents, trademarks, industrial design and copyright; partnership and companies; mining; railways; expert evidence and evidence generally.
Mr. N. Salomon

300-230A ENVIRONMENTAL ASPECTS OF TECHNOLOGY 3(3-0-6). The purpose of this course is to examine the ways in which the application of advanced technology affects the environment in which we live. At the same time, attention will be given to ways in which technology can be applied to the amelioration of the environmental stresses on the urban environment which have resulted from the rapid growth of industry in this century. The course is intended for engineering and science students in their U-1 (or U-2) years. In a series of lectures, the subject is presented in outline form. Specific problems are studied in greater depth in seminar groups. Topics discussed are: the urban environment, with special emphasis on transportation problems; water pollution and its control; air pollution; environmental effects of energy conversion. The course is given by a team of professors from the Engineering Faculty. The course coordinator is Professor Dealy.

300-310A,B ENGINEERING ECONOMY 3(3-0-6). Basic concepts of accounting. Interpretation of financial statements. Mathematics of finance. Techniques for decision making on the acquisition and disposal of capital assets. (Rates of return, uncertainties, risk, retirement and replacement, valuations, leasing, benefit/cost, optimum levels of investment.)
Professor Woolsey

5.2 SCHOOL OF ARCHITECTURE

Acting Director
Derek Drummond, B.Arch. (McG.) M.R.A.I.C.

Professors
John Bland, B.Arch. (McG.), A.A. Dipl., D.Sc. (Carleton), R.C.A., F.R.A.I.C., A.R.I.B.A.
Peter Collins, Dipl. Arch. (Leeds), M.A. (Manc.), L.L.M.(Qu.), F.R.A.I.C.
Norbert Schoenauer, B.Arch. (Bud.), M.Arch. (McG.), O.A.Q., C.U.Q.
Stuart Wilson, B.Arch. (McG.), A.R.I.B.A.

Associate Professors
Bruce Anderson, B.Arch. (McG.), M.Arch. (Harv.), O.A.Q.
Joseph Baker, B.A. (Manc.), F.R.A.I.C.
Brian McCloskey, B.Arch. (McG.), M.Arch. (Harv.), M.R.A.I.C.
John Schreiber, B.Sc. (Arch.) (Glas.), M.L.A. (Harv.), M.R.A.I.C.
Radoslav Zuk, B.Arch. (McG.), M.Arch. (M.I.T.), M.R.A.I.C.

Assistant Professor
Witold Rybczynski, B.Arch., M.Arch. (McG.), O.A.Q.

Lecturer
Pieter Sijpkes, B.Sc. (Arch.), B.Arch. (McG.)

Visiting Professors
Raymond Affleck, Thomas Blood

Associate Member
David Bourke, B.Arch. (McG.), M.Arch. (Harv.), R.C.A., F.R.A.I.C.

Sessional and Part-time Lecturers
Bruce Allan, Vikram Bhatt, Leslie Doelle, Roy LeMoyne, Seymour Levine, Harry Mayerovitch, Arthur Mendel, Roger Richard, Gentile Tondino

The McGill architectural program is divided into two parts. The first leads to a non-professional degree, Bachelor of Science (Architecture), as a preparation for professional degrees related to Architecture. The second, consisting of a minimum of two semesters for those with the McGill B.Sc. (Arch.) degree, leads to the professional degree, Bachelor of Architecture, which has long been recognized by the Order of Architects of Quebec and the Royal Institute of British Architects as representing completion of their educational requirements for membership. The Bachelor of Architecture degree is also recognized by the Commonwealth Association of Architects. Candidates in the first part of the program who plan to go on to the professional degree in Architecture must follow the series of required and elective courses stipulated for professional studies and achieve an acceptable standing both in Design and Construction courses and in their cumulative grade point average. Students commencing their studies in 1975 and subsequently applying to the B.Arch. program must also have had a total of six months' related professional experience. Other students may make appropriate substitutions for certain of the required courses in order to improve their preparation for studies in associated areas.

ANCILLARY ACADEMIC FACILITIES

Laboratories

The Architectural Workshops — see course 301-303A, Design and Construction I and the course 301-304B, Design and Construction II: Mr. Deveault and Mr. Rondeau, technicians, under the direction of Professor Wilson.

The Communications Laboratory — see course 301-201A, Communication, Behaviour and Architecture: Spence Partlo, Technician, under the direction of Professor Anderson.

Collections

The Blackader Library, housing the architecture collection, is under the supervision of Mrs. Eva Doelle. The slide collection is maintained by Mme. Johanne Bellefleur-Arsenault under the direction of Professor Collins.

CURRICULUM FOR THE B.Sc.(Arch.) DEGREE

	Required Courses		Course Credit	
	NON-DEPARTMENTAL SUBJECTS			
	303-205A,B	Mechanics 1	4	
	303-209B	Surveying	3	
	303-283B	Strength of Materials	4	
†	303-289A	Building Materials	2	
†	303-384A	Soil Mechanics and Foundations	2	
†	303-385A	Structural Steel Design	2	
†	303-388B	Reinforced Concrete Design	2	
†	303-492A	Structures	2	
	308-107A,B	Computers and Architecture	2	23

ARCHITECTURAL SUBJECTS

301-201A	Communication, Behaviour and Architecture	6	
301-202B	Architectural Graphics and Design Elements	6	
301-217A	Freehand Drawing I	1	
301-218B	Freehand Drawing II	1	
301-231A	History of Architectural Theory I	3	
301-233B	History of Architectural Theory II	3	
301-303A	Design and Construction I	6	
301-304B	Design and Construction II	6	
301-321A	Freehand Drawing III	1	
301-322B	Freehand Drawing IV	1	
301-324F	Sketching School I	1	
301-327F	Summer Project I	1	
301-405A	Design and Construction 111	1	
301-428F	Summer Project 11	6	
301-446B	Mechanical Services	1	
301-447A	Electrical Services	2	
301-448B	Environmental Acoustics	2	
		2	
One of			
301-406B	Design and Construction IV		
301-410B	Design and Construction V		
301-412B	Design and Construction VII	6	55

† Candidates intending not to proceed to the B.Arch. degree may substitute other courses of equal total weight for any of these.

ELECTIVE COURSES

To be selected from those offered by the School (listed below) and/or a sequence of approved courses from other departments.

ARCHITECTURAL ELECTIVES

301-371A	Standardization in Urban Spaces	2	
301-372B	History of Architecture in Canada	2	
301-373A	History of Housing	2	
301-375B	Landscape	2	
301-376A	Structure of Cities	2	
301-378A	Site Usage	2	
301-379C	Summer Course in Europe	4	
301-461B	Freehand Drawing and Sketching	1	
301-383B	Geometry, Architecture and Environment	2	
301-480A	Seminar on Architectural Judgement	2	
301-481A,B	Seminar on Architectural Theory in the 20th Century	2	
301-482B	Seminar on Legal Aspects of Environmental Control	2	
301-484B	Civic Design	2	
301-585B	Architectural Theory of the Italian Renaissance	2	20
Total			**98**

CURRICULUM FOR THE B.Arch. DEGREE

Required Courses

		Course Credit	
NON-DEPARTMENTAL SUBJECTS			
300-220A	Engineering Law	2	
300-310A,B	Engineering Economy	3	5

ARCHITECTURAL SUBJECTS

301-411A,B	Design and Construction VI	7	
301-413A,B	Design and Construction VIII	7	
301-429F	Summer Project III	1	
301-430F	Sketching School II	1	
301-435A	Urban Planning I	2	
301-436B	Urban Planning II	2	
301-449A	Professional Practice	2	
301-450B	Specifications	2	24
Electives			4
Total			**33**

Courses Offered by the School

301-201A COMMUNICATION, BEHAVIOUR AND ARCHITECTURE 6(2-10-6). Design in relation to human communication and behaviour. Visual perception and architectural expression. Techniques of visual communication and graphic design. Modelling with wet materials. Shaping and forming dry materials. Models. Photographic methods of designing and recording. Basic printing methods including silkscreen. Orthographic projection, sketching and architectural drawing.

The Communications Laboratory, including the Photo Lab, is under the direction of Professor Bruce Anderson, (Spence Partlo, Technician).
Professor Anderson & Mr. Sijpkes

301-202B ARCHITECTURAL GRAPHICS AND ELEMENTS OF DESIGN 6(2-10-6). (Prerequisite: 301-201A.) Orthographic projections, measured drawings, perspective and other conventional representations of architectural elements with reference to their spatial qualities, effects of light, colour and texture. Diagrams and lettering.
Professor Drummond & Mr. Sijpkes

301-217A FREEHAND DRAWING I 1(0-3-0). Drawing in pencil and charcoal.
Mr. Tondino

301-218B FREEHAND DRAWING II 1(0-3-0). (Prerequisite: 301-217A*.) A continuation of course 301-217A.
Mr. Tondino

301-231A HISTORY OF ARCHITECTURAL THEORY I 3(3-0-6). An introduction to the study of architectural ideas.
Professor Collins

301-233B HISTORY OF ARCHITECTURAL THEORY II 3(3-0-6). (Prerequisite: 301-231A*.) A study of architectural ideals of the present century and of the technical and sociological developments which affected them.
Professor Collins

301-303A DESIGN AND CONSTRUCTION I 6(2-10-6). (Prerequisite: 301-202B.) A study of man's need for shelter and for humane environmental amenities. The characteristics of modern building materials and techniques of construction on open sites. Methods of building durable, agreeable and purposeful structures. Design methodology. Aspects of ecology related to architectural design.

The Architectural Workshop is under the direction of Professor Stuart Wilson (Gabriel Deveault and Raymond Rondeau, Technicians).
Professors Wilson & Rybczynski

301-304B DESIGN AND CONSTRUCTION II 6(2-10-6). (Prerequisite: 301-303A.) Instruction in the design of buildings with particular emphasis on considerations of construction, structural adequacy, weather and fire resistance, building codes and industrialized building systems. Working drawings and models.

The Architectural Workshop is under the direction of Professor Stuart Wilson (Gabriel Deveault and Raymond Rondeau, Technicians).
Professors Wilson & McCloskey

301-321A FREEHAND DRAWING III 1(0-3-0). (Prerequisite: 301-218B*.) A continuation of course 301-218B.
Mr. Tondino

301-322B FREEHAND DRAWING IV 1(0-3-0). (Prerequisite: 301-321A*.) A continuation of course 301-321A.
Mr. Tondino

301-324F SKETCHING SCHOOL I 1(0-0-3). (Prerequisite: 301-218B.) A ten day supervised field trip in the late summer to sketch places or things having specific visual characteristics. Students are required to include Sketching School 1 in the B. Sc.(Arch.) program.
Professor Wilson & Mr. Tondino

301-327F SUMMER PROJECT I. 1(0-0-3). (Prerequisite: 301-202B.) These projects are assigned by staff members before the end of the session after discussion with the students in terms of objectives, techniques, etc.
Staff

- **301-371A STANDARDIZATION IN URBAN SPACES 2(2-0-4).** Prerequisite: 301-233B.) A historical survey of tectonic theories related to the

creation of orderly urban environments in the 16th, 17th and 18th centuries; the theories of standardization as applied to the classical "Orders" and their relevance to standardized building components today.
Professor Collins

- **301-372B HISTORY OF ARCHITECTURE IN CANADA 2(2-0-4).** (Prerequisite: 301-233B.) French, British and American influences in the Maritime Provinces, Quebec and Ontario.
Professor Bland

- **301-373A HISTORY OF HOUSING 2(2-2-2).** (Prerequisite: 301-233B.) Indigenous housing both transient and permanent, from the standpoint of individual structure and pattern of settlements. The principal historic examples of houses including housing in the age of the industrial revolution and contemporary housing.
Professor Schoenauer

301-374B PHILOSOPHY OF STRUCTURE 2(2-0-4). (Prerequisite: Satisfactory completion of courses in the Civil Engineering program totalling 45 credits.) An inquiry into the principles and factors underlying the development and forms of structures, natural and man-made, and the application of these principles to current design problems.
Mr. Mayerovitch

- **301-375B LANDSCAPE 2(2-2-2).** (Prerequisite: 301-233B.) Land form, plant life, microclimate; land use and land preservation; elements and methods of landscape design.
Professor Schreiber

- **301-376A STRUCTURE OF CITIES 2(2-2-2).** (Prerequisite: 301-233B) Historical and analytical review of cities and the social, economic, physical and political factors that have determined their location, form, growth or decline.
Professor Bland

- **301-378A SITE USAGE 2(2-2-2).** (Prerequisite: 301-202B.) Arrangement of building developments on the land. Composite patterns resulting from site planning decisions. Scale and distribution of open space. Utilization of space; relationship of private to public domain; spatial determinism and its effect on interaction and development; qualities of interaction and development; qualities of street-scale open space. Site conditions and restrictions. Site engineering, building layout, drainage and services. Regulatory mechanism; incentive and mandatory controls.
Professor Drummond

- **301-379C SUMMER COURSE IN EUROPE,** (4 credits, Prerequisite: 301-371A.) An eight week course consisting of a three week environmental design project supervised at an English university, a three week sequence of organized visits to buildings in Europe already studied in courses 301-233 and 371 and two research projects for which individual written reports must be submitted.
Professor Collins

301-383B GEOMETRY, ARCHITECTURE AND THE ENVIRONMENT 2(2-2-2). Geometry in the formal structure of design. Regular, semi-regular and partly irregular nets or grids, lattices, polygons and polyhedra. Evidence of the presence of these figures and structures in natural objects and natural phenomena. Graphical and physical models. Application to architecture and the human environment.
Professor Wilson

301-405A DESIGN AND CONSTRUCTION III 6(2-10-6). (Prerequisite: 301-304B.) A more developed study of the process of forming an architectural concept involving considerations of purpose, site, desirable spatial relationships, efficient lines of movement, appropriate choice of material, structure and methods of construction, all related to judgements concerning appearance, economy and human relevance. Diagrammatic plans, sections and rough models.
Professors Drummond & Zuk

301-406B DESIGN AND CONSTRUCTION IV 6(2-10-6). (Prerequisite: 301-405A.) A detailed study of the development of an architectural proposal for a comprehensive building involving a coherent initial concept and subsequent decisions as to the means of fulfilling the requirements skillfully and economically. Preliminary working drawings.
Professors Bland & Zuk

301-410B DESIGN AND CONSTRUCTION V 6(2-10-6). (Prerequisite: 301-405A. A detailed study of the function and structure of the urban environment, including surveys of selected urban areas by recording and analysing specific environmental factors. Architectural and urban design with specific reference to their social implications. Urban renewal and rehabilitation by means of systematic design methods. Techniques of instructional publicity including documentary film-making.
Professor Anderson

301-411A,B DESIGN AND CONSTRUCTION VI 7(2-12-7). (Prerequisite: 301-406B, 301-410B or 301-412B.) A detailed study of the organization of multiple units in a problem involving the repetition of elements with appropriately integrated functional, structural and mechanical systems. Principles of problem analysis, programming, site planning, legal considerations, structural possibilities, feasibility and cost studies.
Professors Rybczynski & McCloskey

301-412B DESIGN AND CONSTRUCTION VII 6(2-10-6). (Prerequisite: 301-405A) A study of exceptional problems of architectural design in terms of community needs but always involving specific environmental modifications of an actual place to achieve some physical or social betterment.
Professor Baker

301-413A,B DESIGN AND CONSTRUCTION VIII 7(2-12-7). (Prerequisite: 301-406B or 301-410B.) A study of complex environmental problems involving conflicting requirements, severe restraints, optimization, adaptability to growth and change, and the integration of building systems. Development of systematic design methods leading to a comprehensive environmental form.
Professors Anderson, Bland & Visitors

301-428F SUMMER PROJECT II 1(0-0-3). (Prerequisite: 301-304B.) See course 301-327F.
Staff

301-429F SUMMER PROJECT III 1(0-0-3). (Prerequisites: 301-406B or 301-410B.) See course 301-327F.
Staff

301-430F SKETCHING SCHOOL II 1(0-0-3). (Prerequisite: 301-324F.) Students are required to include Sketching School II in the B.Arch. program.
Professor Wilson & Mr. Tondino

301-435 A URBAN PLANNING I 2(2-2-2). (Prerequisite: 301-406B or 301-410B.) Theory and practice. An examination of different basic approaches to urban planning with examples.
Professor Anderson

301-436B URBAN PLANNING II 2(2-2-2). (Prerequisite: 301-435A.) Theory and practice seminar. Detailed analysis of selected examples of the urban planning process, recent and from the past. Each student will be expected to prepare and present a case study.
Professor Farley

301-446B MECHANICAL SERVICES IN BUILDING 2(2-2-2). (Prerequisite: 301-304B.) Problems encountered in providing mechanical services in buildings. Physiological and environmental aspects of heat, ventilation and air conditions, estimation of heating and cooling loads and selection and specification of equipment. Sprinkler Systems and plumbing. Construction problems produced by installation of this equipment.
Mr. Levine

301-447A ELECTRICAL SERVICES 2(2-2-2). (Prerequisite: 301-304B.) Production, measurement and control of light; design of lighting systems; electrical distribution in residential and commercial buildings; Canadian Electrical Code.
Mr. Mendel

301-448B ENVIRONMENTAL ACOUSTICS 2(2-2-2). (Prerequisite: 301-304B.) Significance of acoustics in architectural design, and in environmental control of buildings. Acoustical requirements in the design of auditoria such as theatres, lecture halls, opera houses, concert halls, churches, motion picture theatres, studios, etc. Principles of noise and vibration control, sound insulating in building construction. Control of mechanical noises and vibrations. Practical noise control in various types of buildings.
Mr. Doelle

301-449A PROFESSIONAL PRACTICE 2(2-2-2). (Prerequisite: 301-406B or 301-410B.) The architect's relationship to his client; responsibility; business conduct; supervision; arbitration; issuing of certificates; competitions; standard forms of contracts; payment; liens; servitudes; public health; building regulations; fees.
Mr. LeMoyne

301-450B SPECIFICATIONS 2(2-2-2). (Prerequisite: 301-406B or 301-410B.) Principles of writing architectural specifications; discussion of actual specifications; essays on common building materials and construction practices; practice in specifying for common trades.
Mr. LeMoyne

- **301-461B FREEHAND DRAWING AND SKETCHING 1(0-3-0)9** (Prerequisite: 301-324F.) Drawing and sketching in pencil, charcoal and other media both in the studio and out-of-doors.
Mr. Tondino

- **301-480A SEMINAR ON ARCHITECTURAL JUDGEMENT 2(2-0-4).** (Prerequisite: 301-304B*.) The investigation, by means of analogies with the judicial process in Law, of the criteria of architectural judgement.
Professor Collins

- **301-481A,B SEMINAR ON ARCHITECTURAL THEORY IN THE 20TH CENTURY 2(2-0-4).** (Prerequisite: 301-304B.) Seminar to allow specific modern architectural problems of design to be studied in detail.
Professors Bland & Zuk

- **301-482B SEMINAR ON LEGAL ASPECTS OF ENVIRONMENTAL CONTROL 2(2-0-4).** (Prerequisite: 301-480A.) A survey of those aspects of Canadian law which can protect or beneficially modify the environment in the interests of the community. Maximum of 12 students with preference given to students in architecture.
Professor Collins

- **301-484B CIVIC DESIGN 2(2-2-2).** (Prerequisite: 301-304B.) The elements of form in buildings and their siting: design in the urban setting.
Professor Drummond

- **301-585B ARCHITECTURAL THEORY OF THE ITALIAN RENAISSANCE 2(2-0-4).** (Prerequisite: 301-233B with "B" grade minimum or equivalent.) An optional seminar course available to 2nd or 3rd year students who have demonstrated above-average ability in architectural history and theory.
Professor Collins

5.3 DEPARTMENT OF CHEMICAL ENGINEERING

Chairman
W.J.M. Douglas, B. Sc.(Qu.), M.S.E., Ph.D.(Mich.)

Professors
J.M. Dealy, B.S.(Kansas), M.S.E., Ph.D.(Mich.), Eng.
M.R. Kamal, B.S.(I ll.), M.S., Ph.D. (Carnegie-Mellon), Eng.
G.A. Ratcliff, B.A., M.A.(Cantab.), Ph.D.(Cornell)

Associate Professors
T.J. Boyle, B.S., M.S. Sc.D. (M.I.T.)
J.-M. Charrier, Dipl. Ing., E.N.S.A.M.(Paris), M.S., Ph.D.(Akron)
O.M. Fuller, B.Ch.E., Ph.D. (Georgia Inst. Tech.)
J.R. Grace, B.E.Sc. (W.Ont.), Ph.D.(Cantab.), Eng.
J.H. Vera, B.Mat. (Chile), Ing.Quim. (U.T.E.), M.S. (Berkeley), Dr. Ing. (Santa Maria)
M.E. Weber, B.S.E. (Prin.), Sc.D. (M.I.T.)

Assistant Professors
A.S. Mujumdar, B.Ch.E. (Bombay), M.Eng., Ph.D. (McG.)
B. Volesky, M.Sc. (Czech. Tech. Univ.), Ph.D. (W. Ont.)

Associate Members
J. Brunet, B.Sc.A. (Montr.), M.S., Ph.D.(Florida)
W.H. Gauvin, B.Eng., M.Eng., Ph.D. (McG.), Eng.
H.L. Goldsmith (Experimental Medicine), B.Sc., M.A. (Oxon.), Ph.D. (McG.)
J.L. Neal (Paediatrics), M.S. (Yale), Ph.D. (McG.)

Special Lecturers
M. Avedesian, N.E. Cooke, F. El Hosseiny, R. Levesque, A. Rudzinski

The central purpose of engineering is to pursue solutions to technological problems in order to satisfy the needs and desires of society. Chemical engineers are trained to solve the kinds of problems that are typically found in the "chemical process industries", which include the chemical manufacturing, plastics, pulp and paper, petroleum refining, and paint industries as well as substantial portions of the food processing, textile, nuclear energy, and pharmaceutical industries. The technological problems and opportunities in these industries are often closely linked to social and economic questions. For this reason, practitioners of chemical engineering often deal with these questions when they are working in management, pollution abatement, product development, marketing and equipment design.

The chemical engineering curriculum begins with a study of those aspects of chemistry, physics, and mathematics that are basic to a quantitative understanding of the process industries. Courses on the technical operations and economics of the process industries are added to this foundation. The core curriculum concludes with a course on cases from engineering practice, process design courses taught by practicing design engineers and a research project course. Several courses are given in a modular, student-paced format that has proved to be both effective and popular with students. Problem-solving, experimenting, planning, and communicating skills are emphasized in courses distributed through the core curriculum.

By means of elective courses, students can also obtain breadth or depth in bodies of knowledge that are not taught in chemical engineering courses. Management, chemistry, metallurgical engineering, mechanical engineering, computer science, and the social sciences are popular choices among today's students. Chemical engineering can form a useful part of a larger educational program that continues with studies in business administration, law, and medicine. The versatility of chemical engineering graduates is a strength that is much appreciated by employers in industry and government.

ACADEMIC PROGRAM

The chemical engineering program comprises 94 credits as outlined below. Students who have passed Chemistry 202 at the CEGEP level are exempt from course 180-212 (Introductory Organic Chemistry I) but still must obtain 94 credits in total, i.e. 4 credits are transferred from required courses to free electives.

Students must obtain a C grade or better in all core courses. For the Department of Chemical Engineering, core courses include all required courses (departmental and non-departmental) as well as restricted electives. A "D" grade is satisfactory only for general elective courses.

The required courses are listed below. Where a course which is nearly equivalent is available elsewhere in the Faculty, students who received a "D" in a Chemical Engineering course may take the "equivalent" course the second time around. These "equivalent" courses are:

Subject	Chem. Eng. Course	Equivalent Course
Fluid Mechanics	302-210B	305-330A,303-321B
Thermodynamics I	302-221A	305-240A,306-212A
Heat Transfer	302-311A	305-346A,B
Process Control	302-455B	305-417A

Where the number of credits for the equivalent course differs from the number in the department course, the difference must be made up in general elective credits (i.e. the total program still includes a minimum of 94 credits).

CURRICULUM FOR THE B.ENG. DEGREE IN CHEMICAL ENGINEERING

Required Courses		**Course Credit**	
NON-DEPARTMENTAL COURSES			
180-212A,B	Introductory Organic Chemistry I	4	
180-250B	Selected Topics in Organic and Physical Chemistry	3	
180-	Additional Chemistry Course	3	
189-261A,B	Linear Algebra and Differential Equations I	3	
189-262A,B	Linear Algebra and Differential Equations II	3	
189-263A,B	Advanced Calculus	3	
189-264A,B	Introduction to Boundary Value Problems	3	
308-208A,B	Computers in Engineering	2	24
CHEMICAL ENGINEERING COURSES			
302-201A	Chemical Process Principles I	4	
302-210A	Fluid Mechanics	4	
302-221A	Chemical Engineering Thermodynamics I	3	
302-222B	Chemical Engineering Thermodynamics II	3	
302-291B	Instrumental Measurements Laboratory	2	
302-311A	Heat Transfer	4	
302-312B	Mass Transfer	3	
302-351A	Separation Processes	3	
302-360A	Technical Paper I	1	
302-392A	Chemical Engineering Laboratory I	4	
302-393B	Chemical Engineering Laboratory II	3	
302-402B	Chemical Process Principles II	3	
302-403A	Chemical Process Economics	3	
302-423A	Chemical Reaction Engineering	3	
302-455B	Process Control	3	
302-462A	Technical Paper II	1	47
And either			
302-453A	Process Design	3	
302-454B	Design Project	4	
or			
302-494A,B,F	Research Project and Seminar	3	
302-495A,B,F	Research Project and Seminar	4	7
Elective Courses			
RESTRICTED ELECTIVES			
Course to be selected from those approved by the Department. (See guidelines below).			7
GENERAL ELECTIVES			
Approximately three courses. (See guidelines below).		9	
Total			**94**

For a student beginning in September, a typical 6 semester program leading to a B. Eng. in Chemical Engineering is shown below:

Semester 1		**Credits**	**Semester 2**		**Credits**	
Lin.Alg. and Diff.Eq.I	(189-261A)	3	Organic Chemistry	(180-212B)	4	
Advanced Calculus	(189-263A)	3	Lin.Alg. and Diff.Eq.II	(189-262B)	3	
Chem. Proc. Princs. I	(302-201A)	4	Fluid Mechanics	(302-210B)	4	
Thermodynamics I	(302-221A)	3	Thermodynamics II	(302-222B)	3	
Computers	(308-208A)	2	Instrumental Meas. Lab.	(302-291B)	2	
		15			16	31

Semester 3

Heat Transfer	(302-311A)	4
Separation Processes	(302-351A)	3
Technical Paper	(302-360A)	1
Chem. Eng. Lab. I	(302-392A)	4
Elective		3
		15

Semester 4

Chemistry	(180-250B)	3
Mathematics	(189-264B)	3
Mass Transfer	(302-312B)	3
Chem. Eng. Lab. II	(302-393B)	3
Elective		3
		15 30

Semester 5

Process Economics	(302-403A)	3
Chem. Reaction Eng.	(302-423A)	3
Technical Paper	(302-462A)	1
Research or Design		3
Chemistry		3
Elective		3
		16

Semester 6

Chem. Proc. Princs. II	(302-402B)	3
Process Control	(302-455B)	3
Research or Design		4
Electives		7
		17 33
		94

Of the 16 credits of electives, at least 7 must be chosen from a list drawn up by the Department, to encourage greater specialization.

Notes: 1) 301-455 can be taken in Term 4 if desired.
2) Most students who begin in January require 7 semesters to graduate. However, in some cases it is possible for a student beginning in January to graduate in 6 terms plus one summer course (302-494).

Restricted Electives

A minimum of 7 credits of the 94 credit total must be chosen from a list of Restricted Electives approved by the Department. The purpose of this requirement is to provide students with an area of specialization within the broad field of chemical engineering. Alternatively, some students use the restricted electives to increase the breadth of their chemical engineering training.

The Restricted Elective Courses currently approved by the department are as follows:

302-356A	Computer Methods in Chemical Engineering
302-373A	Introduction to Industrial Microbial Processes
302-452B	Particulate Systems
302-471B	Industrial Water Pollution Control
302-472A	Industrial Air Pollution Control
302-481A	Polymer Engineering
302-483B	Industrial Rheology
302-486B	Textile Technology
302-594B	Fermentation Engineering

Courses 481A, 483B, and 486B comprise a **Polymeric Materials** sequence. Additional courses in this area may be taken as general electives in the Chemistry department (e.g. 180-455B) or at the graduate level (302-682A, 302-783A). The department has considerable expertise in the polymer area. An agreement has recently been worked out with the Canadian Association of Textile Colourists and Chemists which is cooperating with course 486B.

Courses 373A, 483B and 594B make up a sequence in **Food and Fermentation Processes.** Students interested in this area are strongly advised to consider taking additional courses in this area as general electives, particularly those offered by the School of Food Science of the Faculty of Agriculture, the Faculty of Medicine and courses in biochemistry and microbiology (e.g. 362-442A, 377-200A, 376-413B, 336-320A, 336-321B, 336-322B). The food, beverages and pharmaceutical industries are large industries in the Montreal area and these courses help make our students attractive to employers in these areas.

The third area in which there is a sequence of courses is **Pollution Control.** The department offers two courses in this area 302-471B and 302-472A, for the areas of water and air pollution control, respectively. As some water pollution control problems are solved by microbial processes, course 302-373A is in part relevant to the pollution control area. Likewise as the solution to pollution problems frequently involves removal of particulate matter from gaseous or liquid streams, the course 302-452B is also relevant. Finally, a large number of additional courses in this area are listed elsewhere in this Announcement under the sections entitled Pollution Control and Environmental Studies.

Note that many of the restricted electives will be offered only in alternate years. Students should therefore plan their electives as far ahead as possible. With the approval of the instructor and faculty advisor, students may also take graduate courses as restricted electives.

General Electives

The general elective requirement enables our students to increase the breadth or depth of their

education. University level courses may be chosen in any field. Particular attention is drawn to the following.

1. Any credits, above 7 obtained from courses on the restricted elective list, count towards the general elective requirement.

2. Three general elective courses are offered by the department. Course 302-370B, Models of Socio-Technical Systems, is part of the university-wide network of courses designated as the Environmental Studies Program. Courses 302-363A, B and 302-464A, B, Projects in Chemical Engineering, grew out of student initiatives. In these two courses students propose and work, individually or in small groups, on projects of their own choosing. A faculty member willing to act as advisor must be found for each project, but students must take the initiative. Successful projects have treated such areas as work attitudes of engineers, pollution and safety regulations, fermentation process development and product recovery, unemployment, and teaching methods.

3. The following outside areas should be looked at closely:

   a) French courses.
   b) Chemistry courses.
   c) Management courses.
   d) Courses in other branches of engineering to broaden the technical base of the student.
   e) Courses in the arts and social sciences to broaden the social and cultural background and to develop communications skills.
   f) Faculty courses in engineering.

4. The only restrictions on general electives are the following:

   a) A course must fit into the timetable without causing conflicts.
   b) A course may not be elected if it is essentially a repetition of material already covered in the curriculum (e.g. a second introductory computing course) or if the student has already mastered the material (e.g. introductory Spanish for a Spanish-speaking student).

5. General electives count into the grade point averages like any other course. The only difference in the way these courses are treated is that a "D" is sufficient to pass.

Curriculum Committee

The curriculum committee is composed of three students, elected by their classes, and three staff members. This committee provides a forum for all matters involving undergraduate student/staff interactions. While the primary concern is with matters of curriculum and courses (their content, evaluation, marking, scheduling, teaching methods, etc.), the committee has also taken up a number of other matters in recent years, e.g. working space, facilities (equipment and libraries), plant tours.

Canadian Society for Chemical Engineering

The Chemical Engineering Student Society has for many years been affiliated both with the CSChE (Canadian Society for Chemical Engineering) and with the AIChE (American Institute of Chemical Engineers). For a nominal fee of $3.00 per year, students receive "Chemistry in Canada", a monthly publication, and the AIChE Student Members Bulletin as well as other privileges of student membership in the two societies. Locally, the student chapter also organizes a series of social, educational and sporting events. For example, recent events have included student-professor banquets and Christmas parties, dances, speakers, broomball games and joint meetings with the Montreal Section of the CSChE. The latter gives students a chance to mix with practicing chemical engineers.

Scholarships and Bursaries

Certain bursaries and scholarships are open to students in the department. Students who are interested in bursaries and scholarships should consult the section "Undergraduate Scholarships, Bursaries, Prizes, Medals and Loan Funds" of the General Announcement available from the Registrar's Office. Prof. Volesky should be consulted regarding specific scholarships and bursaries.

Courses Offered By The Department

302-201A CHEMICAL PROCESS PRINCIPLES 1 4(3-0-9). (Co-requisite: 189-261A) Solution of chemical engineering problems by the application of the laws of conservation of mass and energy. Applications in steady and transient processes. Self-paced, modular course.
Professor Weber

302-210B FLUID MECHANICS 4(3-1-8). (Co-requisite: 189-264B) Fluid properties; fluid statics; basic concepts and equations of fluid dynamics including the continuity and Navier-Stokes equations, Bernoulli's equation and application to flow measuring devices; dimensionless groups and similitude; momentum theorems, pumps; two dimensional potential flow; drag and boundary layers; pipe flow; losses in valves and fittings.
Dr. Avedesian

302-221A CHEMICAL ENGINEERING THERMODYNAMICS 1 3(3-0-6). (Co-requisite 189-263A). Work and mechanical energy, first and second laws of thermodynamics, use of property charts and tables, relationships between thermodynamic properties, mechanical energy balance, heat engines and refrigerators, use of equations of state, estimation of equilibrium properties, phase equilibrium in

single component systems. Optional module on statistical thermodynamics. Self-paced, modular system of instruction.
Professor Dealy

302-222B CHEMICAL ENGINEERING THERMODYNAMICS II 3(3-0-6). (Prerequisite: 302-221A.) Thermodynamics of mixtures, phase equilibrium in multicomponent systems, chemical reaction equilibrium in homogeneous and heterogeneous systems.
Professor Dealy

302-291B INSTRUMENTAL MEASUREMENTS LABORATORY 2(0-3-3). (Prerequisite: 302-221A*. Co-requisite:302-210B.) Techniques for measurement of properties of solids, liquids and gases; application of these techniques in practice; selection of measurement techniques for engineering applications.
Professor Charrier

302-311A HEAT TRANSFER 4(3-0-9). (Prerequisites: 302-221A*, 302-210B*, 189-264A,B*.) Transport of heat by conduction; transport by convection in free and forced flows; transport by radiation. Mathematical formulation and solution of heat transfer problems. Design of heat transfer equipment.
Professors Vera and Weber

302-312B MASS TRANSFER 3(3-0-6). (Prerequisites: 302-311A*.) Transport of matter by diffusion. Transport by convection in free and forced flows. Design of mass transfer equipment: distillation columns, packed bed contactors, etc.
Professor Douglas

302-351A SEPARATION PROCESSES 3(3-0-6). (Prerequisites: 308-208A,B, 302-201A*, 302-222B*.) Analysis of separation processes using macroscopic material and energy balances; applications to distillation and extraction; design of staged cascades; performance of real systems; selection of operating conditions and contacting equipment.
Dr. Avedesian

- **302-356A COMPUTER METHODS IN CHEMICAL ENGINEERING 3(2-0-7).** Application of scientific computers in process design, chemical engineering analysis and research. Process simulation; structure and design of general purpose programs; linear programming; numerical analysis. Batch and conversational computer modes are used. (Alternate years, next given 1977-78)
Professor Boyle

302-360A TECHNICAL PAPER I 1(0-0-3). A technical paper prepared according to instructions issued by the Department.
Professor Mujumdar

- **302-363A,B PROJECTS IN CHEMICAL ENGINEERING I 2(1-0-5).** (Prerequisite: 302-201A*.) Projects on social or technical aspects of chemical engineering practice. Students must suggest their own projects to be approved and supervised by a member of the staff.
Staff

- **302-370B MODELS OF SOCIO-TECHNICAL SYSTEMS 3(3-0-6).** Introduction to the use of computer simulation for the study of social system behaviour. Expression of theories in computer simulation form. Interpretation of simulation results. Comparison between simulation models and mental models. World models developed at M.I.T.
Professor Boyle

- **302-373A INTRODUCTION TO INDUSTRIAL MICROBIAL PROCESSES 3(3-1-5).** (Prerequisite: 180-212A,B.) Introduction to the fundamental principles of the microbial world, cell structure and growth. Comparative study of the morphology, biology and relationships of algae, fungi, bacteria and viruses. Energy transformations. Survey of selected industrial microbial processes of importance in producing food, antibiotics, organic acids, polymers, etc. Microbial leaching. Ecological aspects and waste-water treatment. Single-cell protein synthesis.
Professor Volesky

302-392A CHEMICAL ENGINEERING LABORATORY I 4(2-3-7). (Prerequisite: 302-291B.) Planning, execution, and evaluation of experimental projects; design of experiments; interpretation of experimental results; statistical analysis of experimental data; effective work in groups; selected laboratory exercises on chemical engineering topics.
Professor Fuller and Staff

302-393B CHEMICAL ENGINEERING LABORATORY II 3(1-3-5). (Prerequisite: 302-392A*.) Guided practice in planning and executing experimental projects on chemical engineering topics.
Professor Fuller and Staff

302-402B CHEMICAL PROCESS PRINCIPLES II 3(3-0-6). (Prerequisites: 302-201A, 180-250B*.) Applications of physical, organic and inorganic chemistry to case studies in chemical process contexts. The cases chosen emphasize process and product development in the Canadian chemical industry.
Professor Vera

302-403A CHEMICAL PROCESS ECONOMICS 3(3-0-6) (Prerequisites: 302-311A*, 302-351A*.) Quantitative analysis of economic problems relating to chemical processes. Evaluation of economic optima for operating plants. Methods of cost estimation for new plants. Interest and investment costs; depreciation; alternative investments.
Professor Boyle & Mr. R. Lévesque

302-423A CHEMICAL REACTION ENGINEERING 3(3-0-6). (Prerequisites: 302-201A, 180-250B*.) Application of kinetics of homogeneous chemical reactions in calculating reactor size, production rate, selectivity and yield; interaction between chemical reaction and heat transport;

kinetics of heterogeneous catalysis; catalyst properties; mass and heat transfer in heterogeneous reactions; reactor size and production rate for heterogeneous reactions.
Professor Grace

- **302-452B PARTICULATE SYSTEMS 3(3-0-6).** (Prerequisites: 302-201A, 302-210B*.) Study of operations involving multiphase systems with one of the phases finely sub-divided as bubbles, drops or particles. Applications in evaporation, crystallization, fluidization etc. (Alternate years, next given 1976-77).
Staff

302-453A PROCESS DESIGN 3(3-0-6). (Prerequisites 302-311A*, 302-312B*, 302-351A**.) Integration of unit operations and chemical engineering science in the design of chemical plants. The evaluation of the optimum combination of the purchase price and operating costs is emphasized.
Professor Volesky & Mr. Rudzinski

302-454B DESIGN PROJECT 4(2-0-10). (Prerequisite: 302-453A.) Process design brief will be prepared for an industrial system involving heat and mass transfer operations. The topic will be assigned to give sufficient scope for selecting design alternatives.
Dr. Cooke & Mr. Rudzinski

302-455B PROCESS CONTROL 3(3-0-6). (Prerequisites: 302-311A*, 302-351A*.) Linear incremental models of processes; development and representation of control strategies; measurement and interpretation of transient response; controller tuning; feedforward and cascade control systems. Assignments use an instrumented process laboratory, analog computer, and minicomputer control system.
Professor Boyle

302-462A TECHNICAL PAPER II 1(0-0-3). (Prerequisite: 302-360A.) A technical paper prepared according to instructions issued by the Department.
Professor Volesky

- **302-464A,B PROJECTS IN CHEMICAL ENGINEERING II 2(1-0-5).** (Prerequisite: 302-363A,B.) Projects on social or technical aspects of chemical engineering practice. Students must suggest their own projects to be approved and supervised by a member of the staff.
Staff

- **302-471B INDUSTRIAL WATER POLLUTION CONTROL.** (Prerequisite: 302-210B) Water quality standards; water surveys; process design considerations; physical, chemical and biological treatment of aqueous effluents from industrial plants; case studies in the Canadian context. (Alternate years, next given 1977-78).
Professor Volesky

- **302-472A INDUSTRIAL AIR POLLUTION CONTROL.** (Prerequisite: 302-210B.) Air quality standards, air surveys, process design consideration, dispersion theory and stack design; dust cleaning methods, design of scrubbers, case studies in the Canadian context. (Alternate years, next given 1976-77).
Dr. Cooke

- **302-481A POLYMER ENGINEERING 3(3-0-6).** (Prerequisites: 302-210B, 180-212A,B.) The application of engineering fundamentals to the preparation and processing of polymers. Classification and characterization of polymers, reaction media and kinetics of polymerization, reactor design, mechanical behaviour of polymers, visco-elasticity and rheology, processing techniques; extrusion, molding, etc.
Professor Kamal

- **302-483B INDUSTRIAL RHEOLOGY 2(1-1-4).** (Prerequisites: 302-210B or equivalent.) An introduction to the basis of mechanical testing of viscous liquids and pastes in the process industries. Topics include: fundamentals of rheology; classification of material responses; instrumentation for rheological measurements; applications to the petroleum. plastics, food processing and pharmaceuticals industries. (Alternate years, next given 1977-78).
Professor Dealy

- **302-486B TEXTILE TECHNOLOGY 3(3-0-6).** (Prerequisite: 302-210B or equivalent.) Application of engineering principles to the following topics: chemical constitution and properties of fibre-forming polymers, theories of fibre structure; relations between molecular structure and properties of natural and man-made fibres; staple and filament yarns; blending of fibres; effect of operating variables on yarn properties; weaving and knitting technology; finishing of fibres, textile testing.
Dr. El Hosseiny

302-494A,B,F RESEARCH PROJECT AND SEMINAR 3(1-6-2). (Prerequisite: 302-393B.) Independent study and experimental work on a topic chosen by consultation between the student and the Departmental staff.
Staff

302-495A,B,F RESEARCH PROJECT AND SEMINAR 4(1-9-2). (Prerequisite: 302-494A.) Independent study and experimental work on a topic chosen by consultation between the students and the Departmental staff.
Staff

- **302-594B FERMENTATION ENGINEERING 3(3-0-6).** (Prerequisite: 302-373A.) Engineering aspects of biochemical and microbiological processes. Design and scale-up of fermentation equipment. Oxygen transfer. Instrumentation. Agitation and aeration. Immobilized enzyme processes. Separation techniques including reverse osmosis and ultrafiltration. Bio-hazards. (Alternate years, next given 1976-77).
Professor Volesky

5.4 DEPARTMENT OF CIVIL ENGINEERING AND APPLIED MECHANICS

Chairman

R.G. Redwood, B. Sc. (Eng.) (Bristol), M.A.Sc (Tor.), Ph.D. (Bristol), Eng.

Professors

B. Stafford Smith, B.Sc.(Manchester), Ph.D. (Bristol), D.Sc.(Southampton).
B. Stafford Smith, B.Sc.(Manchester), Ph.D.(Bristol) D.Sc.(Southampton).
R.N. Yong, M.S.C.E.(Purdue), M.Eng., Ph.D. (McG.), Eng.

Associate Professors

R.G. Cox, B.A., Ph.D.(Cantab.), Eng.
R.D. Japp, M.Eng., Ph.D.(McG.), Eng.
M.S. Mirza, B.Eng.(Karachi), M.Eng., Ph.D. (McG.), Eng.
J.C. Osler, B.Eng.(McG.), S.M.(Harv.), Eng.
A. Pakalnins, D.Eng.Sc.(Latvia), Eng.
S.B. Savage, M.S.(Calif. Tech.), Ph.D.(McG.)
D.A. Selby, B.Eng., M.Eng.(McG.), Eng.
C.J. Turkstra, M.S.(Ill.), Ph.D.(Wat.), Eng.

Assistant Professors

V. Chu, M.A.(Tor.), Ph.D.(M.I.T.)
A.R.Cook, M.Sc., Ph.D.(Mich.)
F.L. Hart, B.S.E., M.S., Ph.D.(Conn.)
D. Mitchell, B.A.Sc., M.A.Sc., Ph.D.(Tor.), P.Eng.
D. Panagiotakopoulos, B.E.(C.C.N.Y.), Ph.D. (Cornell)
G.R. Thomas, M.E., Ph.D.(Cornell)

Lecturers

P.J. Brun, B.Sc.A., M.Sc.A.(Laval), Eng.
P. Janiga, B.Eng., M.Eng.(McG.), Eng.

Associate Member

G. Cavadis, B.Eng.(Athens), M.Sc.(McG.), Fac. of Mgmt.

Special Lecturers and Part-Time Staff

L.J. Arcand, A. deGouville,
J.L. deStein, B. Eskenazi, N.W.E. Lee,
R.J. Lindsay, H. Poitras, L.A. Rivard

Civil Engineering can be defined as that branch of engineering which deals with systems of constructed facilities. Responsibilities of Civil Engineers thus include the planning, development, and construction of transportation systems, urban services, resource development projects, waterways, and structures varying from skyscrapers to rocket vehicles. Applied mechanics refers to branches of science and analysis upon which the practice of civil engineering is based.

As with all other branches of engineering, rapidly expanding knowledge in science and mathematics coupled with the development of computers has led to great changes in the practice of civil engineering. The curriculum of this Department fully reflects these changes, and the foundation provided will enable graduates to cope with further changes in the future.

The required courses ensure a sound scientific and analytical basis for professional studies through courses in mechanics, solid mechanics, fluid mechanics, soil mechanics, structural analysis, systems analysis and mathematics. Fundamental concepts are applied to various fields of practice in both required and elective courses.

By a suitable choice of elective courses a student can attain advanced levels of technical knowledge in particular specialized areas. After completing such a program, he will then be well prepared for a professional career or for graduate studies at any prominent university in North America or abroad. In professional practice the civil engineer may be concerned with detailed design, or with planning and project management, both requiring the technical understanding provided by his engineering studies; he may be concerned with projects varying in size from those costing multi-millions of dollars to small schemes costing several thousands of dollars. Diverse professional careers may be followed in either the private or public sectors.

Alternatively, a student can elect to develop his interests in a more general way by combining courses within the department with courses from other departments or faculties. Such a general program of studies in civil engineering has proven to be an excellent basis for careers in urban government and business management.

CURRICULUM FOR THE B.ENG. DEGREE IN CIVIL ENGINEERING AND APPLIED MECHANICS

Required Courses		Course Credit	
NON-DEPARTMENTAL SUBJECTS			
186-221A	General Geology	3	
189-261A,B	Linear Algebra and Differential Equations I	3	
189-262A,B	Linear Algebra and Differential Equations II	3	
189-263A,B	Advanced Calculus	3	
189-264A,B	Introduction to Boundary Value Problems	3	
305-290A	Graphics	2	
308-208A,B	Computers in Engineering	2	
And one of	An Approved Course in Economics	3	
304-281B	Electric Power	3	
306-212A	Engineering Thermodynamics		25
CIVIL ENGINEERING SUBJECTS			
303-201B	Structural Materials	2	
303-202A	Probabilistic Systems	3	
303-203A	Technical Reporting	1	
303-205A,B	Mechanics 1	4	
303-206B	Mechanics II	3	
303-207A,B	Solid Mechanics	4	
303-208B	Deterministic Systems	3	
303-209B	Surveying	3	
303-220F	Technical Papers	1	
303-310B	Sanitary Engineering	3	
303-312B	Soil Mechanics	4	
303-313A	Structural Analysis	3	
303-314A	Structural Design I	3	
303-315B	Structural Design II	3	
303-319B	Transportation Engineering	3	
303-321A	Fluid Mechanics and Hydraulics I	3	
303-322B	Fluid Mechanics and Hydraulics II	3	
303-417A	Foundations	3	
303-418B	Project	3	55
Elective Courses			
TECHNICAL ELECTIVES			
Approximately 5 courses to be selected from those listed below offered by the Department, or from other suitable graduate or undergraduate courses.			
303-416B	Transportation Economics	2	
303-430A	Municipal Systems	3	
303-431A	Stream Pollution and Control	3	
303-432B	Hydrology	3	
303-433B	Urban Planning	2	
303-435A	Geometronics	2	
303-439B	Photogrammetry and Interpretation	3	
303-440A	Traffic Engineering	3	
303-445A	Construction Project Management	3	
303-450A	Soil Behaviour	3	
303-451B	Highway and Airport Design	2	
303-460A	Structural Analysis II	3	
303-461B	Structural Mechanics	3	
303-462A	Design in Metals	3	
303-463A	Design in Concrete	3	
303-464B	Experimental Stress Analysis	2	
303-470A	Research Project	3	15
GENERAL ELECTIVES			
Two courses			5
Total			**100**

Courses Offered By The Department

303-201B STRUCTURAL MATERIALS 2(2-2-2). Study of structural materials from the point of view of microscopic phenomena and the relationship to mechanical behaviour. Study of metals, concrete and polymeric materials.
Professor McKyes

303-202A PROBABILISTIC SYSTEMS 3(3-1-5). An introduction to probability, statistics and decision theory with applications to Civil Engineering design. Descriptive statistics, common probabilistic models, principles of parameter estimation, elementary bayesian analysis.
Professor Turkstra

303-203A TECHNICAL REPORTING 1(1-0-2). Students will be encouraged to communicate ideas and factual data, either verbally, visually or in writing, relating to various situations encountered in engineering practice. Formal assignments will be limited to four short written submissions, including one group assignment, while the remainder of the course will emphasize active participation in class.
Professors Osler and Thomas

303-205A,B MECHANICS I 4(4-2-6). Systems of forces and couples, resultants, equilibrium. Frames and beams, reactions, shear forces, bending moments. Centroids, centre of gravity, distributed forces, moment of inertia. Friction, limiting equilibrium, screws, belts. Kinematics and kinetics of particles and systems, coordinates, mass-acceleration, work-energy, impulse-momentum. Orbital motion of particles.
Professors Japp, Selby & Mr. Janiga

303-206B MECHANICS II 3(3-2-4). (Prerequisite: 303-205A,B; 189-261A,B. Co-requisite: 189-263A,B.) Particle kinematics, moving coordinate systems, rigid body kinematics, moments of inertia. Rigid body kinetics, mass-acceleration, work-energy, impulse momentum. Euler's equations. Lagrange's equations, Hamilton's principle, vibrations of single degree of freedom systems.
Professor Japp

303-207A,B SOLID MECHANICS 4(3-2-7). † (Prerequisite: 303-205A,B*, 308-208A,B**.) Stress-strain relationships; elastic and inelastic behaviour; performance criteria. Elementary and compound stress states, Mohr's circle. Shear strains, torsion. Bending and shear stresses in flexural members. Deflections of beams. Statistically indeterminate systems under flexural and axial loads. Columns. Dynamic loading.
†Two-hour laboratory periods and problem periods, alternate weeks.
Professors Savage, Stafford Smith, Thomas & Staff

303-208B DETERMINISTIC SYSTEMS 3(3-1-5). (Prerequisite: 189-261A,B**.) Introduction to the systems approach and optimisation techniques; applications of linear programming; critical path scheduling; marginal and sensitivity analysis; evaluation of projects and choosing among alternatives; integration of technological and social aspects in engineering projects.
Professor Panagiotakopoulos

303-209B SURVEYING 3(2-3-4). (Prerequisite: 308-208A,B **.) The construction and use of modern survey instruments: transit, level, etc.; linear and angular measurements and errors; types and magnitudes; probability; significant figures; units of measurements; simple circular curve; theory and use of the Polar Planimeter; engineering and architectural applications of surveying measurements. A field school must be attended after completion of the lecture course.
Professor Selby and Mr. Lindsay

303-220F TECHNICAL PAPERS 1(0-0-3). Two technical papers are to be presented, one in the U2 year and one in U3. These are normally prepared during the summer months, and are to be on a technical topic, related, if possible, to the student's summer employment. Detailed instructions are provided in the spring, and papers may be submitted either in early September or early January. Registration in this course should be in the semester in which the second paper is submitted.

303-281A ANALYTICAL MECHANICS 3(3-1-5). (Corequisites: 189-261 and 189-263.) Kinematics of particles, dynamics of particles, Newton's laws of motion. Work, conservative forces, potential energy, principle of virtual work. General three dimensional and constrained motion of particles. Relative motion and general moving frames of reference, d'Alembert's principle. Angular momentum of particles, central force fields and orbits. Dynamics of a system of particles, kinetic energy and angular momentum, collisions and impulse, bodies of variable mass. General motion of rigid bodies, moments and products of inertia, principal axes, angular momentum and kinetic energy of rigid bodies, gyroscopic precession. Generalized coordinates and forces, Lagrange's equations, Hamilton's principle and Hamilton's equations.
Professor Cox and Mr. Janiga

303-282B VIBRATIONS AND WAVES 3(3-0-6). (Prerequisite: 303-281A; Corequisite: 189-264B.) Vibrations of mechanical and electrical systems of single and multiple degrees of freedom, normal modes and normal co-ordinates. Standing waves of stretched strings, Fourier series. Standing waves on circular and rectangular membranes. Forced vibrations and resonance. Progressive waves on continuous strings and electrical transmission lines.

Phase and group velocities, energy and momentum transport. Modulations, pulses and wave packets, Fourier integral. Reflection and transmission of waves, impedance concepts, selective wave transmission. Electromagnetic waves and polarization. Interference and diffraction.
Professor Chu

303-283B STRENGTH OF MATERIALS 4(3-3-6). (Prerequisite: 303-205A,B*.) Structural behaviour, trusses, statically determinate beams, frames, and arches; moments of inertia, stress, strain, properties of materials; bending and shearing stresses; torsion; fixed and continuous beams; reinforced concrete beams; columns; combined stresses; Mohr's circle.
Professor Selby

303-287B DYNAMICS 3(3-1-5). (Prerequisite: 303-281A; Corequisites: 189-267, 189-269.) Free, forced and damped vibrations of single and multiple degree of freedom linear systems. Nonlinear vibrations and stability, phase plane and singular points, subharmonic response, limit cycle. Derivation of wave equation for various systems by Hamilton's principle, reflection and transmission, damping of waves, dispersion, formation of discontinuities. Theory of elasticity, stress and strain tensors, equations of motion, elastic surface waves.
Professor Cox

303-289A BUILDING MATERIALS 2(2-2-2). Microscopic and macroscopic considerations of metals, Portland cement, concrete and polymers at an introductory level.
Professor McKyes

303-290A MECHANICS I 4(4-1-7). Introduction to Mechanics. Fundamental quantities. Conservation of mass. Kinematics, momentum and force; conservation of momentum; Newton's Laws; concepts of force and impulse; angular momentum and its conservation; central force motion; various classes of forces (electrostatic, friction, gravity, etc.) and pseudo-forces; relative motion. Energy: kinetic, potential and other mechanical forms; work. Static equilibrium; statics, electrostatics, hydrostatics and elastostatics. Centre of mass and moment of inertia. Rigid-body dynamics. Connection of mechanics with other branches of engineering.
Professor Lee

303-291A,B MECHANICS II 3(3-1-5). (Prerequisite: 303-290A.) Classification of mechanics. Coordinate systems and relative motion. Degrees of freedom, generalized coordinates and constraints. Newtonian, Lagrangian and Hamiltonian formulations of mechanics. Solution of equations of motion for simple systems. Rigid-body dynamics; Euler's equations. Energy methods; stability and the phase plane. Transition from discrete to continuous, deformable systems. Wave propagation.
Professor Paidoussis

303-293B MECHANICS II HONOURS 3(3-1-5). (Prerequisite: 303-290A.) Same topics as covered in Mechanics II, but in a manner and with the stress appropriate for honours students.
Professor Paidoussis

303-310B SANITARY ENGINEERING 3(3-3-3). Introduction to the fundamental principles of municipal water supply and wastewater disposal; transportation, storage, pumping, characteristics, and examination of water and wastewater; physical, chemical and biological operations and processes of water and wastewater treatment systems.
Professor Hart

303-312B SOIL MECHANICS 4(3-3-6). (Prerequisite: 303-207A,B*.; Co-requisite: 186-221A.) Soil properties and characteristics of soils, foundation types, soil behaviour, classification, yield and failure, general considerations of stability.
Professor Yong

303-313A STRUCTURAL ANALYSIS I 3(3-1-5). (Prerequisite: 303-207A,B.) Virtual work and energy methods; statically indeterminate systems, continuous beams and frames; slope deflection and moment distribution methods; influence lines; matrix methods; elementary plastic analysis.
Professor Stafford Smith

303-314A STRUCTURAL DESIGN I 3(3-1-5). (Prerequisite: 303-207A,B*.) Design in steel and timber. Properties of structural steels, classification and behaviour of steel structures. Allowable stress and plastic design. Members in axial tension and compression; flexure, with and without lateral support; reinforced beams, unstiffened plate girders. Introduction to beam-columns. Connections. Truss design. Fabrication and erection. Properties of timber, timber beams, columns and connections.
Mr. Brun

303-315B STRUCTURAL DESIGN II 3(3-1-5). (Prerequisite: 303-207A,B*.) A study of the physical properties and characteristics of concrete; the design process; the mechanics of reinforced concrete in bending; shear and diagonal tension; bond and anchorage; structural systems; continuous beams and slabs; columns under axial load.
Professors Mirza & Mitchell

303-319B TRANSPORTATION ENGINEERING 3(3-1-5). Prerequisites; 303-202A, 303-208B, 308-208A,B.) Operating characteristics of highway, guided-ground, air, water-borne, and pipeline transport modes; land use/transportation interaction; travel demand analysis; transportation planning methodology; analysis of transportation alternatives; highway design; human factors and safety in highway transportation; location, planning, and design of airports.
Professor Cook

303-321A FLUID MECHANICS AND HYDRAULICS I 3(2-3-4). (Prerequisite: 303-205A,B; Corequisite: 189-264A,B.) Fluid statics, kinematics of

flow, conservation-equations, control volume, dimensional analysis and similitude, hydraulic machinery steady flow in pipes, steady open channel flow.
Professor Chu

303-322B FLUID MECHANICS AND HYDRAULICS II 3(2-3-4). (Prerequisite: 303-321A.) Open channel transitions and controls, hydraulic structures, ideal fluid flow theory, boundary layers, surface waves, coastal hydraulics, hydraulic transients, water hammer, surge tanks.
Professor Savage

303-384 SOIL MECHANICS AND FOUNDATIONS 2(2-3-1). (Prerequisites: 303-283B* or 303-207A,B*.) Nature of soils, identification and classification. Physical properties of soils, permeability, compressibility, shear strength, principle of effective stresses, stress strain behaviour. Seepage, frost action. Field exploration of soil conditions. Foundations, shallow and deep. Earth pressures and retaining structures, stability of earth masses.
Professor Japp

303-385B STRUCTURAL STEEL DESIGN 2(2-2-2). (Prerequisite: 303-283B; Co-requisite: 303-289A.) A study of the characteristics of structural steel frames in building construction. Included is the detailed design of axially loaded members, trusses, beams and girders, and the overall framing of buildings. Also a consideration of structural loads, code requirements and design procedures.
Mr. Brun

303-388B REINFORCED CONCRETE DESIGN 2(2-2-2). (Prerequisite: 303-283B; Co-requisite: 303-289A.) A study of elementary reinforced concrete building systems including a consideration of their characteristics. Also the working stress design of simple and continuous span beams, and the design of columns. An introduction to ultimate strength designs is also given. In addition the principles of structural timber design are studied.
Mr. Eskenazi

303-416B TRANSPORTATION ECONOMICS 2(2-1-3). (Prerequisites: 303-202A*, 303-208B*.) Transportation economics. Treatment of highway and other transportation problems, drawing from statistical and probabilistic analysis as well as from economics.
Mr. deGouville

303-417A FOUNDATIONS 3(3-1-5). (Prerequisite: 303-312B*.) Site investigation, engineering properties of soils for design. Plastic equilibrium, bearing capacity theory. Design of footings and rafts, differential settlement, coefficient of subgrade reaction. Earth pressures, design of retaining walls and bulk heads. Piles, soil-structure interaction, estimates of the bearing capacity of single piles, group action.
Professor Osler

303-418B PROJECT 3(0-4-5). (Prerequisite: Completion of an approved set of required and technical elective courses.) The project consists of a study or design topic in any of the branches of Civil Engineering. The project may be analytical or experimental, and may combine various branches in the discipline. The topic can be chosen in consultation with a staff member, whose approval is necessary. Guidance will be provided by Department staff and by practising engineers. The project is normally carried out in a student's last semester.
Professor Cook and Staff

- **303-430A MUNICIPAL SYSTEMS 3(3-2-4).** (Prerequisite: 303-310B.) Design construction and economics of water supply and wastewater disposal systems, including process and control engineering, and industrial waste disposal.
Professor Pakalnins

- **303-431A STREAM POLLUTION AND CONTROL 3(3-0-6).** (Prerequisite: 303-310B**.) Sources and types of pollution; effects of pollution; thermal pollution; oil pollution; pollution from farmland; eutrophication; stream self-purification; pollution surveys and water quality standards.
Professor Hart

- **303-432B HYDROLOGY 3(3-2-4).** (Prerequisites: 303-202A, 303-208B**.) Physical background to hydrology; climate variations; water balance, seepage and groundwater, evapo-transpiration, runoff; methods of collecting data and statistical treatment. Elements of flood routing; reservoir design.
Professor Cavadias

- **303-433B URBAN PLANNING 2(2-2-2).** (Prerequisite: 308-208A,B*.) City in history; master plans of land use and communications; traffic and transportation systems; planning and design of residential subdivisions.
Professor Pakalnins

- **303-435A GEOMETRONICS 2(2-3-1).** (Prerequisite: 303-209B.) Surveys for engineering projects; altimetry — trigonometric and barometric; underground surveys; hydrographic surveying — bathymetry; discharge of streams, electronic radio location; electronic distance measuring — tellurometer — geodimeter — use of the laser — airborne profile recording; elements of geodetic surveying; simple cartography.

- **303-439B PHOTOGRAMMETRY AND INTERPRETATION 3(3-3-3).** (Prerequisite: 303-209B.) Construction of planimetric and topographic maps, determination of space position of objects from photographs; preparation of composite pictures of the ground; aerial cameras and equipment. Vertical aerial photographs are used to evaluate, analyse, classify and interpret images of objects seen on the photographs; laboratory use of stereoscopes and a Multiplex projector, and field visits, are included.
Professor Arcand and Mr. Lee

303-440A TRAFFIC ENGINEERING 3(3-2-4). (Prerequisite: 303-319B*.) Driver, vehicle and traffic flow characteristics; origin-destination stud-

ies, traffic studies and analysis, accident studies, queueing theory applications, gap acceptance, simulation, highway capacity, traffic regulations and control measures, intersection control.
Professor Cook

303-445A CONSTRUCTION PROJECT MANAGEMENT 3(3-2-4). (Prerequisites: 303-202A, 303-208B, 303-314A or 303-315B.) Planning, operation, and control construction projects using systems analysis methods, economics, modern management techniques, and statistical analysis; linear graph modeling, PERT, precedence networks; scheduling of operations, manpower, and equipment, resource levelling; progress monitoring and reporting; the rate of work method; time-cost trade-offs; cost estimation; evaluation of contract bidding; risk analysis; methods improvement in construction management.
Professor Panagiotakopoulos

- **303-450A SOIL BEHAVIOUR 3(3-0-6).** (Prerequisite: 303-312B.) Soil-water interaction in relation to soil properties, environmental considerations, volume changes, infiltration and diffusion. Soil freezing, soil strength parameters, time-deformation characteristics, stability and yield.
Professor Yong

- **303-451A HIGHWAY AND AIRPORT DESIGN 2(2-2-2).** (Prerequisite: 303-312B*.) Design and construction of subgrades; fill selection, compaction, compaction control, soil stabilization, frost action. Stability of cuts and embankments. Design of rigid and flexible pavements and bases, stresses in layered systems, evaluation of design parameters, current methods of design, evaluation and strengthening of existing pavements.
Professor Osler

- **303-460A STRUCTURAL ANALYSIS II 3(3-2-4).** (Prerequisite: 303-313A.) Computer structural analysis, direct stiffness applied to two and three dimensional frames and trusses, matrix force method, nonlinear problems, cables and arches, approximate analyses, energy methods, buckling of trusses and frames, dynamic analysis of frames.
Professor Thomas

- **303-461B STRUCTURAL MECHANICS 3(3-2-4).** (Prerequisite: 303-207A,B.) Transformation of stress and strain in three dimensions, basic equations of elasticity, stress concentrations, theories of failure, unsymmetrical bending of beams, shear centres, torsion of structural sections, elementary analysis of plates and shells.
Professor Harris

- **303-462A DESIGN IN METALS 3(3-3-3).** (Prerequisites: 303-313A, 303-314A.) A study of structural systems; recent developments and trends in structural steel such as cantilever construction, castellated beams, composite construction, continuity, etc.; economic factors and cost studies; compression members by elastic and inelastic theory; miscellaneous details with high strength bolts and welds.
Professor Redwood

- **303-463A DESIGN IN CONCRETE 3(3-3-3).** (Prerequisites: 303-313A, 303-315B.) Ultimate strength design of reinforced concrete beams, slabs, columns, retaining walls and footings. Floor systems and building frames. Yield line theory of slabs. Composite construction, design of prestressed concrete beams.
Professor Harris

- **303-464B EXPERIMENTAL STRESS ANALYSIS 2(2-3-1).** (Prerequisite: 303-313A.) Two dimensional stress and strain equations, Mohr's circle of strain, strain rosettes and graphical solutions; extensometers; electric strain gauges, circuitry for static and dynamic measurement, transducers. Two dimensional photoelasticity, photostress; brittle coatings, dimensional analysis and structural models.
Professor Harris

- **303-470A RESEARCH PROJECT 3(0-1-8).** (Prerequisite: 60 credits in the Civil Engineering and Applied Mechanics program.) This course is open only to those students with a high cumulative grade point average. A research project must be carried out and a technical paper prepared under the supervision of a member of staff. The nature of the project must be established with the consent of the Staff Supervisor, and must be approved by the Department before registration. This course is to be taken in conjunction with the required course 303-418B, and the project therefore can be carried out through two semesters.

303-492A STRUCTURES 2(2-2-2). (Prerequisite: 303-385A; Co-requisite: 303-388B.) A study of structural systems in concrete, steel, timber; a philosophy of structure; choice of structure; economic factors in design; recent developments and trends in structure; lateral stability by frame action, bracing, sheer walls; mechanics of certain structural forms.
Professor Selby

PROGRAMS IN CIVIL ENGINEERING

Considerable freedom exists for students to influence the nature of the program of study which they follow in the Department of Civil Engineering and Applied Mechanics. The Department offers a variety of advanced elective courses in three main groupings: Geotechnical Engineering, Structural Engineering, and a broad area which may be called Environmental Systems. The last of these is wide in scope, and embraces studies in urban systems engineering, transportation, hydrology, environmental and municipal engineering, hydraulics, photogrammetry and air photograph interpretation and pollution studies.

In order to complete a program in the minimum time, the need to satisfy prerequisites limits the choice of courses in the first and second semesters.

September entrants into U1 are advised to register in the following courses in the first semester:

189-261A	Lin. Algebra and Diff. Eqns. I
189-263A	Advanced Calculus
300-211A	Economic Environment
303-203A	Technical Reporting
303-205A	Mechanics I
305-290A	Graphics
308-208A	Computers in Engineering

In the second semester, the following courses are advised:

189-262B	Lin. Algebra and Diff. Eqns. II
303-201B	Structural Materials
303-206B	Mechanics II
303-207B	Solid Mechanics
303-208B	Deterministic Systems
303-209B	Surveying

January entrants into U1 are advised to register in the following courses in the first semester:

189-261B	Lin. Algebra and Diff. Eqns. I
189-263B	Advanced Calculus
303-201B	Structural Materials
303-205B	Mechanics I
303-209B	Surveying
308-208B	Computers in Engineering

In the second semester, the following courses are advised:

186-221A	General Geology
189-262A	Lin. Algebra and Diff. Eqns. I
300-211A	Economic Environment
303-203A	Technical Reporting
303-207A	Solid Mechanics
305-290A	Graphics

Students wishing to take lighter loads than those outlined above may do so after consultation with their adviser.

Courses taken in Semester 3 or later are very much dependent upon a student's interests and ability. Information and advice concerning different possibilities are made available in the Department prior to registration. All programs require the approval of a Staff Adviser. Programs for students transferring into the Department with advanced standing will be dependent upon the academic credit previously achieved, and such a program will be established only after consultation with a Staff Adviser.

The General Elective requirements of five credits may be satisfied by taking approved courses, at the appropriate level, given anywhere within the University.

Technical Elective courses must amount to 15 out of a total of 100 credits, and most of these electives will be selected from those offered in the Department. Providing good grades have been maintained, and with the instructor's approval, the courses elected may include certain ones normally provided for graduate students. Permission may be granted for a student to take a coherent group of elective courses from outside of the Department, subject to the overall requirement that the emphasis of these elective courses is compatible with the professional orientation of a civil engineer. Such a grouping of courses is the Sub-program in Management, which is particularly relevant to students interested in careers in construction or business management.

Four credits of the technical elective requirements will be considered as satisfied by completion of the courses of the Sub-program, listed in Section 6. Civil Engineering students are also exempt from course 280-373A,B Operations Research, because of their required courses 303-202A and 303-208B. With the five General Elective credits considered as part of this Sub-program, a minimum of 103 credits are required for the B.Eng. degree in Civil Engineering and Applied Mechanics with the Sub-Program in Management.

In addition to courses described in Section 6, the following courses given by other Departments are particularly relevant for civil engineering students:

301-374B	Philosophy of Structures
301-435A	Urban Planning I
301-436B	Urban Planning II
301-446B	Mechanical Services in Buildings
301-448B	Environmental Acoustics
306-230B	Geophysical Exploration
306-321B	Behaviour of Rock Structures
306-422A	Applied Explosives
308-350A,B	Numerical Analysis

In some cases enrolment may be limited, and in others the instructor's permission should be obtained before registration.

5.5 DEPARTMENT OF ELECTRICAL ENGINEERING

Chairman

P. Silvester, B.S.(Carnegie), M.A.Sc.(Tor.), Ph.D.(McG.), Eng.

Professors

E.L. Adler, M.A.Sc.(Tor.), Ph.D.(McG.), Eng.
M.L. Blostein, M.Eng.(McG.), Ph.D.(Ill.), Eng.
R.P. Comsa, M.Sc.(Zurich), M.Eng(McG.), Eng.
G.L. d'Ombrain, B.Sc.Eng., Ph.D.(Lond.)
G.W. Farnell, S.M.(M.I.T.), Ph.D.(McG.), F.I.E.E.E., Eng.
T.J.F. Pavlasek, B.Eng., M.Eng., Ph.D.(McG.), Eng.
G.D. Zames, B.Eng.(McG.), Sc.D.(M.I.T.)

Associate Professors

P.R. Bélanger, S.M., Ph.D.(M.I.T.), Eng.
C.H. Champness, M.Sc.(Lond.), Ph.D.(McG.)
C. Fengler, Dipl.Phys., Ph.D.(Hamburg)
M.J. Ferguson, M.S.(Cal.Tech.), Ph.D.(Stan.)
M. Fukada, M.S.E.E.(Tokyo), Ph.D.(Calif.)
A.A. Gundjian, B.Sc(Alexandria), Ph.D.(Penn.)
M.D. Levine, M.Eng(McG.), Ph.D.(Lond.), Eng.
A.S. Malowany, B.Eng., Ph.D.(McG.), Eng.
N. Rumin, M.Sc., Ph.D.(McG.), Eng.
E. Sigurdson, B.Sc.(Man.), Ph.D.(Lond.)
F. Spitzer, B.Sc., Ph.D.(Lond.), Eng.
G.L. Yip, M.Sc.(Qu.), Ph.D.(Tor.)

Assistant Professors

P. Kabal, M.A.Sc., Ph.D. (Toronto)
R. Kwong, S.M., Ph.D.(M.I.T.)
H.C. Lee, B.Sc.(Man.), Ph.D.(McG.)
B.T. Ooi, S.M.(M.I.T.), Ph.D.(McG.)
A. Reeves, Ph.D.(Kent)

Lecturers

K.L. Fraser, B.Eng.(McG.), Eng.

Associate Member

J.S. Outerbridge, Ph.D., M.D.C.M. (McG.)

Sessional, Special and Part-Time Staff

C.W. Bradley, D. Crevier, P.J. Fenwick, B. Gevay, B.A. Howarth, M. Kaplan, G. Karady, K.J. Koiste, M.A. Marin, S. Rauch, F.M. Reza, P.K. Sen, L. Snider, A. Turgeon

Looking back from the year 2000, historians of electrical engineering will probably consider the twentieth century to be divisible into three equal periods. The first period witnessed a rapid and exciting growth in the sophistication of electro-mechanical devices, while the second was marked by a startling growth in electronic communications. It is probably safe to forecast that the present era will be the age of digital computer systems and computer communications.

Since a digital computer is essentially a large-scale electronic system, it is quite natural for the growing importance of the computer to be reflected in the ever evolving curriculum of the Department of Electrical Engineering. Thus a substantial portion of the Department's activity centers on the electronic devices and circuits which form the building blocks of electronic computers. An equally great amount of effort is devoted to the structure and organization of computers. The physical make-up of computers, however, forms only a portion of the broader picture. An important part of the electrical engineer's work has always been, and probably always will be, the design of electrical devices and systems. Computer-aided design thus falls well within the province of the electrical engineer. So do problems of man-machine and computer-computer communications, since the effective use of electronic communication technologies as well as the efficient distribution of electrical energy require rapid movement and processing of data. At the same time, small special-purpose computers are being incorporated as functional sub-units into virtually every conceivable variety of electrical system.

While the Department recognizes the importance of the computer revolution, it has not neglected in its program such important areas as communications, control systems, electromagnetic propagation, electro-optical systems, power engineering, and electron devices and circuits.

The Department offers two accredited undergraduate programs, a regular and an honours course leading to the professionally recognized degrees of, respectively, B.Eng. and B.Eng. (Honours). Suitably qualified and motivated students can complete either program in six semesters (three years) of post-collegial studies. Both courses provide the student with a strong background in mathematics, networks, electronics, computer engineering and electromagnetics. These provide the fundamental tools for further studies. Because of the diversity of the field it is not possible to become expert in everything, but it is considered important for the student to obtain an exposure to a diverse subset of the important areas. In order to promote this breadth, the student is required to choose from a restricted set of courses. Finally, there is a large group of technical electives which allow considerable freedom to specialize in specific areas, or to obtain a broad perspective of the field. Six major areas of specialization are defined: Communication Systems; Computer Engineering; Control Systems; Electromagnetics and Waves; Solid State Devices and Electronics; Power Engineering.

In addition to technical elective requirements, the student must also satisfy a general elective requirement. Although it is possible to take technical courses to satisfy this requirement, students are urged to use this freedom to study in some depth a field entirely outside electrical engineering. The Faculty is defining course packages that study a certain field in sufficient depth to be called a minor. With judicious use of general electives and the occasional additional course, a student in the regular course should be able to take a faculty minor.

The Honours curriculum is designed to produce a stronger background in the mathematical and physical bases of electrical engineering with the goal of an in-depth study of certain areas of the field. As a result, the required courses stress a more fundamental and analytical approach to the subject matter. The technical electives must be chosen to provide coherent study of certain well-defined areas and should serve as a basis for future study either in graduate school or industry. Students in this curriculum normally benefit from smaller classes and more personal attention on the part of the staff.

Laboratories for both teaching and research work are good, and growing. Because much of the Department's teaching is organized on a project basis, it is occasionally difficult to draw a clear line between graduate and undergraduate activities. In the laboratories, investigative work is often carried out by advanced undergraduate students as well as graduates; in the classroom, graduate and undergraduate courses frequently overlap. The facilities of the Department include several digital computer installations, as well as analog computers. In addition, the new Louis Herdt coherent optics laboratory, semiconductor devices laboratory, acoustics laboratory, and various others provide challenging opportunities for project work as well as research.

In recent years, an advanced degree has become increasingly necessary for electrical engineers interested in pursuing technically oriented careers. More than one-third of McGill Electrical Engineering graduates currently continue to a Master's degree or beyond. While the computer-oriented bias evident in the undergraduate program is also reflected in graduate course offerings, project and thesis work is usually planned on a highly individual basis and hence covers a very broad spectrum.

CURRICULUM FOR THE B.ENG. DEGREE IN ELECTRICAL ENGINEERING (REGULAR)

Required Courses

		Course Credit	
NON — DEPARTMENTAL SUBJECTS			
189-261A,B	Linear Algebra and Differential Equations I	3	
189-262A,B	Linear Algebra and Differential Equations II	3	
189-263A,B	Advanced Calculus	3	
189-264A,B	Introduction to Boundary Value Problems	3	
189-381A	Functions of a Complex Variable	3	
198-321A	Modern Physics	3	
303-281A	Analytical Mechanics	3	
303-282B	Vibrations and Waves	3	24
ELECTRICAL ENGINEERING SUBJECTS			
304-201A,B	Introductory Circuit Theory	3	
304-221A,B	Introduction to Computers	3	
304-231A,B	Introductory Electronics	3	
304-291A,B	Electrical Laboratory I	3	
304-302A,B	Network Analysis	3	
304-333A,B	Electronic Circuits	3	
304-351A,B	Electromagnetic Fields	3	
304-352B	Electromagnetic Waves	3	
304-392A,B	Electrical Laboratory II	3	
304-470F	Technical Paper	2	
304-493A,B	Electrical Laboratory III	3	
304-494A,B	Electrical Laboratory IV	3	35
ELECTRICAL ENGINEERING BREADTH SUBJECTS			
	Choose 12 credits from the list below		
304-303A,B	Signals and Systems	3	
304-305B	Random Signals and Noise	3	
304-322A,B	Digital System Design	3	
304-332B	Properties of Solids	3	
304-361A,B	Electromechanical Energy Conversion I	3	
308-350A,B	Numerical Analysis	3	12

Elective Courses

TECHNICAL ELECTIVES

Eighteen credits chosen from 300, 400, 500, or 600 level courses given by the department. Courses contained in the breadth list but not used for that requirement may also be chosen. Subject to departmental approval up to six credits may be taken from outside the department. 18

GENERAL ELECTIVES

Six credits selected in accordance with departmental regulations. The regulations concerning general electives and a list of approved courses may be obtained from the department during the preregistration period. 6

Total **95**

TYPICAL REGULAR PROGRAM

A typical organization of the six semester study leading to a B.Eng. in Electrical Engineering is given below:

REGULAR COURSE

	Semester 1 (Fall)			**Semester 2 (Winter)**	
189-261A	Diff. Eq. I	3	189-262B	Diff. Eq. II	3
189-263A	Advanced Calculus	3	189-264B	Boundary Value Problems	3
303-281A	Analytical Mechanics	3	303-282B	Vibration and Waves	3
304-201A	Circuits	3	304-231B	Electronics	3
304-221A	Intro. to Computers	3		General Elective	3
		15			15
	Semester 3 (Fall)			**Semester 4 (Winter)**	
189-381A	Complex Variables	3	304-333B	Electronics	3
198-321A	Modern Physics	3	304-352B	Electromagnetic Waves	3
304-291A	Elect. Lab I	3	304-392B	Elect. Lab II	3
304-302A	Networks	3		Required breadth courses	6
304-351A	Electromagnetic Fields	3			
	Required breadth course	3			
		18			15
	Semester 5 (Fall)			**Semester 6 (Winter)**	
304-470F	Technical Paper	2	304-494B	Elect. Lab IV	3
304-493A	Elect. Lab III	3		Technical Electives	9
	Technical Electives	9		General Elective	3
	Required breadth course	3			
		17			15

NOTES: 1) 304-322, Digital System Design, is a prerequisite to several computer oriented courses. It is therefore recommended that students electing to take this course do so in Semester 3 or Semester 4.

2) A core course is the same as a required course and necessitates a C or better for acceptable credit.

CURRICULUM FOR THE B.ENG. DEGREE IN ELECTRICAL ENGINEERING (HONOURS)

Required Courses

		Course Credit	
NON-DEPARTMENTAL SUBJECTS			
189-261A,B	Linear Algebra and Differential Equations I	3	
189-263A,B	Advanced Calculus	3	
189-267A,B	Linear Algebra and Differential Equations II	3	
189-269A,B	Introduction to Boundary Value Problems	3	
189-384B	Probability	3	
189-385A	Complex Variables	3	
198-271B	Quantum Physics	3	
303-281A	Analytical Mechanics	3	
303-287B	Dynamics	3	
		3	27
ELECTRICAL ENGINEERING SUBJECTS			
304-201A,B	Introductory Circuit Theory	3	
304-221A,B	Introduction to Computers	3	
304-236B	Introductory Electronics	3	
304-291A,B	Electrical Laboratory I	3	
304-307A	Network Analysis	3	
304-308A	Signals and Systems	3	
304-337B	Electronic Properties of Solids	3	
304-338B	Electronic Circuits	3	
304-356A	Electromagnetic Fields	3	
304-357B	Electromagnetic Waves	3	
304-376A	Thermal Physics	3	
304-392A,B	Electrical Laboratory II	3	
304-470F	Technical Paper	3	
304-493A,B	Electrical Laboratory III	2	
304-499A,B	Electrical Laboratory IV	3	
		3	44

Elective Courses

TECHNICAL ELECTIVES

Twenty-one credits must be selected from graduate and undergraduate courses. At least six credits of 500 or 600 level courses in Electrical Engineering must be selected in each of two areas, as defined in this Announcement (Computer Engineering, Communication Systems, Control Systems, Power Engineering, Electromagnetics and Waves, Electronic Devices and Circuits). Course selections are subject to the approval of the department. Subject to departmental approval up to six credits may be taken from outside the department. 21

GENERAL ELECTIVES

Six credits selected in accordance with departmental regulations. The regulations concerning general electives and a list of approved courses may be obtained from the department during the preregistration period. 6

Total **98**

TYPICAL HONOURS PROGRAM

A typical organization for six semesters of study leading to a B.Eng. (Hon.) is given below. Entry into Honours Program is based on the results of first semester examinations.

Honours Course

	Semester 1 (Fall)			Semester 2 (Winter)	
189-261A	Diff. Eq. 1	3	189-267B	Diff. Eq. II	3
189-263A	Advanced Calculus	3	189-269B	Boundary Value Problems	3
303-281A	Analytical Mechanics	3	198-271B	Quantum Physics	3
304-201A	Circuits	3	303-287B	Dynamics	3
304-221A	Intro. to computers	3	304-236B	Electronics	3
				General Elective	3
		15			18
	Semester 3 (Fall)			**Semester 4 (Winter)**	
189-385A	Complex Variables	3	189-384B	Probability	3
304-291A	Elect. Lab. I	3	304-338B	Electronics	3
304-307A	Networks	3	304-337B	Electronic Properties of Solids	3
304-308A	Signals and Systems	3			
304-356A	Electromagnetic Fields	3	304-357B	Electromagnetic Waves	3
304-376A	Thermal Physics	3	304-392B	Elect. Lab II	3
		18			15
	Semester 5 (Fall)			**Semester 6 (Winter)**	
304-470F	Technical Paper	2	304-499B	Elect. Lab IV	3
304-493A	Elect. Lab III	3		Technical Electives	12
	Technical Electives	9			
	General Elective	3			
		17			15

Notes: 1) 304-322, Digital System Design, is a prerequisite to several computer-oriented courses. It is recommended that the student take this as the elective in Semester 3 or Semester 4.

2) A core course is the same as a required course and necessitates a C or better for acceptable credit.

PROGRAMS IN ELECTRICAL ENGINEERING

Our course of study allows considerable flexibility. By an appropriate choice of courses the student can obtain concentrated study in computer engineering, power systems, electromagnetics and waves, electronic devices and integrated circuits, communications or control systems. Alternatively a student may mix courses from these areas to obtain a broad technological base in Electrical Engineering. Some suitable combinations of electives are listed below. These combinations are not exclusive, others can be planned with the assistance of the student's faculty advisor.

COMPUTER ENGINEERING

Computer engineering at McGill emphasizes the structure, design, and role of computers in modern systems. Modern communication, control, and power systems all have mini-computers deeply imbedded within them. In order to obtain the best system, the computer engineer needs a thorough understanding of both hardware and software. A combination of required courses and technical electives satisfy this aim.

Required Course		**Credits**
304-221A,B	Introduction to Computers	3
Required Breadth Courses		
304-322A,B	Digital System Design	3
308-350A,B	Numerical Analysis	3
Technical Electives (Electrical Engineering)		
304-424A	Small Computer Systems	3
304-425B	Computer Organization and Architecture	3
304-529A	Image Processing and Communication	3
304-531B	Real Time Systems	3
304-532A	Computer Graphics	3
304-533B	Computerized Text Processing	3

Other Electives

189-417A	Mathematical Programming	3
280-373A	Operations Research I	3
308-300A,B	Programming Languages	3
308-310B	Computer Software Organization and Design	3
308-315A	Information Structures	3
308-320B	Files and Data Bases	3

In addition to the above there are projects involving computing, digital system design, computer interfacing and applications in the required electrical laboratories.

COMMUNICATION SYSTEMS

Required Breadth Courses

304-303A,B	Signals and Systems	3
304-305B	Random Signals and Noise	3

Technical Electives

304-411A	Communication Systems	3
304-424A	Small Computer Systems	3
304-472B	Communications Technology	3
304-512B	Digital Signal Processing	3
304-521B	Digital Communications	3
304-522A	Statistical Communication Theory	3
304-529A	Image Processing and Communication	3
304-531B	Real Time Systems	3
304-593B	Antennas and Propagation	3

In addition to the above, courses describing some of the components used in communication systems are available. A strong background in antennas, microwaves, solid state electronics and computer structure is recommended. Finally the system ideas embodied in control system theory can be quite useful.

CONTROL SYSTEMS

Required Breadth Courses

304-303A,B	Signals and Systems	3
304-305B	Random Signals and Noise	3

Technical Electives

304-404A	Small Computer Systems	3
304-424A	Control Systems	3
304-464A	Power Systems Analysis	3
304-501A	Frequency Design of Linear Control Systems	3
304-502B	State Space Methods in Linear Systems	3
304-512B	Digital Signal Processing	3
304-531B	Real Time Systems	3

To obtain sufficient breadth to design complex control systems, additional knowledge of computer structure, communications, electronics and mathematical programming is desirable.

POWER ENGINEERING

Required Breadth Courses

304-361A,B	Electromechanical Energy Conversion I	3

Technical Electives

304-462B	Electromechanical Conversion II	3
304-463A	High Voltage Engineering	3
304-464B	Power System Analysis	3
304-501A	Frequency Design of Linear Control Systems	3
304-502B	State Space Methods in Linear Systems	3

304-531B	Real Time Systems	3
304-562A	Continuum Electromechanics	3
304-565B	Inverter and Chopper Circuits	3

The above courses together with relevant options from the systems, circuits, control, electromagnetics and computer areas form a strong foundation for power engineers.

ELECTROMAGNETICS AND WAVES

Technical Electives

304-471B	Acoustics	3
304-543B	Numerical Methods in Electromagnetics	3
304-562A	Continuum Electromechanics	3
304-573B	Microwave Devices and Circuits	3
304-575B	Optical and Magnetic Properties of Solids	3
304-592A	Microwave Theory and Techniques	3
304-593B	Antennas and Propagation	3
304-596B	Coherent Wave Optics	3

These courses along with the required electromagnetics courses serve as a basis for further work in electromagnetic phenomena and as an introduction to microwave devices for all electrical engineers.

ELECTRONIC DEVICES AND CIRCUITS

Required Breadth Courses

304-322A,B	Digital System Design	3
304-332B	Properties of Solids	3
304-303A,B	Signals and Systems	3

Technical Electives

304-443A	Integrated Circuit Technology	3
304-474B	Electronic Design	3
304-572A	Laser Electronics	3
304-573B	Microwave Devices and Circuits	3
304-575B	Optical and Magnetic Properties of Solids	3
304-579A	Semiconductor Devices and Models	3
304-596B	Coherent Wave Optics	3

In addition to the above, the required courses give a firm basis in both the physics of electronic devices and linear and digital electronics. The required laboratories include extensive experimentation using modern integrated and discrete electronics components, a small scale integrated circuit fabrication laboratory and a laser communications and holography facility.

Courses Offered By The Department

304-201A,B (Formerly 304-001) INTRODUCTORY CIRCUIT THEORY 3(3-1-5). (Co-requisite: 189-261A,B.) KVL and KCL laws, branch constitutive relations, response of simple circuits to suddenly applied excitations, impulse response, steady-state response to sinusoidal excitations, power and energy, elementary loop and nodal analysis, network theorems.

304-221A,B (Formerly 304-021) INTRODUCTION TO COMPUTERS 3(3-1-5). Introduction to digital systems, information and arithmetic; elementary combinational and sequential logic; stored program control and simple machine language programs; introduction to assemblers and compilers. The student will also experience both simulations and the use of a small (PDP-8) computer. FORTRAN will be used for simulation and computational excercises.

304-231A,B (Formerly 304-131) INTRODUCTORY ELECTRONICS 3(3-1-5). (Prerequisite: 304-201A,B*.) Semiconductor junctions and transistor characteristics, bipolar and field-effect transistors. Digital circuits and logic gates. Transistor circuits and biasing. Frequency response of small-signal amplifiers. Integrated circuit fabrication.

304-236B (Formerly 304-136) INTRODUCTORY ELECTRONICS 3(3-1-5). (Prerequisite: 304-201A,B*.) Honours section of 304-231; similar in content to 304-231 but taught in greater depth.

304-281A,B (Formerly 304-181) ELECTRIC POWER 3(3-0-6). (Prerequisite: 189-261A,B.) Electrical circuit theory; distribution of electric power, electrical power utilization, electrical machines, transformers, controlled rectifiers. Not open to electrical engineering students.

304-291A,B (Formerly 304-191) ELECTRICAL LABORATORY I 3(1-5-4). (Co-requisite: 304-231A,B or 304-236B.) Operating principles and limitations of basic electrical and electronic laboratory measurements and techniques including meters, oscilloscopes, generators and bridges.

304-302A,B (Formerly 304-202) NETWORK ANALYSIS 3(3-1-5). (Prerequisite: 304-201A,B. Co-requisite: 189-381A.) Formulation of network equilibrium equations, transform solution techniques, network functions, two-port analysis, network theorems, pole-zero design techniques.

304-303A,B SIGNALS AND SYSTEMS 3(3-1-5). (Co-requisite: 304-302A,B or 304-307A.) Inputs, outputs, states. Linearity, time-invariance. Analysis of linear system in state form. Convolution and transfer functions. Signal space, orthogonal expansions, Fourier series. Fourier transforms and applications to modulation and sampling. Feedback, the Routh-Hurwitz criterion, the root locus and the Nyquist stability criterion.

304-305B RANDOM SIGNALS AND NOISE 3(3-0-6). (Prerequisite: 304-303A,B or 304-308A.) Introduction to probability, engineering applications and heuristic basis, axioms and sets, conditional probability, independence; random variables, definitions, functions, moments, vector and scalar, characteristic functions; random processes, noise model, stationarity, ergodicity, correlation and power spectrum, spectrum measurements; response of linear systems to random inputs, cross spectral densities, narrow band noise; introduction to discrete time and space processes, Markov chains and elementary queues.

304-307A (Formerly 304-207) NETWORK ANALYSIS 3(3-1-5). (Prerequisite: 304-201A,B. Co-requisite: 189-381B or 189-385B.) Honours section of 304-302; similar in content to 304-302 but taught in greater depth.

304-308A SIGNALS AND SYSTEMS 3(3-1-5). (Co-requisite: 304-307A or 304-302A,B.) Honours section of 304-303; similar in content to 304-303 but taught in greater depth.

304-322A,B (Formerly 304-222) DIGITAL SYSTEM DESIGN 3(3-0-6). (Prerequisite: 304-221A,B; 304-231A,B** or 304-236B**.) Information representation and manipulation, coding, logic functions, Boolean algebra, graphical and algorithmic methods of synthesis and minimization of combinational circuits, finite state machines, synthesis of synchronous sequential networks, asynchronous sequential logic.

304-332B PROPERTIES OF SOLIDS 3(3-0-6). (Prerequisite: 198-321A.) Statistical properties of materials. Electrons in metals and semiconductors, free electron theory of metals, energy bands. Conduction processes in semiconductors. Theory of the pn junction and bipolar transistor.

304-333A,B ELECTRONIC CIRCUITS 3(3-0-6). (Prerequisites: 304-231A,B or 304-236B, 304-302A,B* or 304-307A*. Recommended Co-requisite: 304-303A,B or 304-308A.) Multistage amplifiers; the operational amplifier. Feedback and compensation. Noise. Linear analog systems: the integrator, oscillators, tuned amplifier. Nonlinear analog systems: comparator, sample-and-hold circuits, logarithmic amplifier. Power circuits.

304-337B ELECTRONIC PROPERTIES OF SOLIDS 3(3-0-6). (Prerequisites: 198-321A or 198-271B, 304-231A,B or 304-236B.) Review of kinetic theory of gases, crystal lattices, X-ray diffraction, electrons in metals, drift velocity, mobility, free electron theory, density of states, Fermi energy, Kronig Penney model, energy bands, Brillouin zones, intrinsic semiconductor, extrinsic semiconductor, recombination, drift mobility determination, continuity equation, capacitance of pn junction, diode equation, bipolar transistor.

304-338B ELECTRONIC CIRCUITS 3(3-0-6). (Prerequisites: 304-236B or 304-231A,B, 304-307A or 304-302A,B. Recommended co-requisite: 304-308B.) Honours section of 304-333; similar in content to 304-333 but taught in greater depth.

304-351A,B (Formerly 304-251) ELECTROMAGNETIC FIELDS 3(3-0-6). (Prerequisites: 304-201A,B*, 304-221A,B, 189-263A,B and 189-264A,B, or 189-269A,B.) Electrostatics and electric potential; kinematics, electrodynamics and Maxwell's equations; magnetostatics and magnetic vector potential; energy and power; time-varying fields; applications to engineering problems.

304-352B ELECTROMAGNETIC WAVES 3(3-0-6). (Prerequisites: 304-351A or 304-356A, 303-282B or 303-287B.) Steady-state and transient analysis of wave propagation in uniformly distributed systems; energy and power transfer; models, scattering parameters and the Smith chart; measurements on distributed systems; dispersion, periodically distributed systems and the ω-β diagram.

304-356A (Formerly 304-256) ELECTROMAGNETIC FIELDS 3(3-0-6). (Prerequisites; 304-201-A,B, 189-263A,B and 189-264A,B, or 189-269A,B.) Honours section of 304-351; similar in content to 304-351 but taught in greater depth.

304-357B ELECTROMAGNETIC WAVES 3(3-0-6). (Prerequisites: 304-356A, 303-282B or 303-287B.) Honours section of 304-352; similar in content to 304-352 but taught in greater depth.

304-361A,B (Formerly 304-261) ELECTRO-MECHANICAL ENERGY CONVERSION I 3(3-0-6). (Co-requisite: 304-302A,B or 304-307A.) Basic electromechanical energy conversion processes. Simple electromechanical transducers. Transformers. Machine models. Characteristics of commutator, induction and synchronous machines.

304-376A (Formerly 304-276) THERMAL PHYSICS 3(3-0-6). (Prerequisites: 198-271B, 303-287B.) Definition of thermodynamics; equilibrium thermodynamics; potentials as Legendre transforms of internal energy; concept of thermodynamic energies; equilibrium and non-equilibrium properties of matter; heat and current flow; statistical mechanical foundation of thermodynamics; distribution functions, application to material properties.

304-383A,B (Formerly 304-283) ELECTRONIC INSTRUMENTATION 3(3-0-6). (Prerequisite: 304-281A.) Linear electronic devices, amplifiers and feedback, switching circuits, digital and logic circuits, instrumentation measurement transducers, modulation and transmission of signals. Not open to electrical engineering students.

304-392A,B (Formerly 304-292) ELECTRICAL LABORATORY II 3(3-5-4). (Prerequisite: 304-291A,B. Co-requisite: 304-302A or 304-307A.) Advanced instrumentation and measurement techniques with applications to electronic circuit design.

304-404A CONTROL SYSTEMS 3(3-0-6). (Prerequisites: 304-303A,B and 304-305B; or 304-308A and 189-384B.) Frequency response design: gain and phase margins, Nichols chart; lead, lag, and PID controllers. Discrete and sampled-data systems: convolution sum, the z-transform, transfer function, state space description; stability; bilinear transformation and design. Controllability and observability. Linear regulator problem: quadratic performance indices. Matrix Lyapunov equation and Riccati equation. Linear observers. Optimum feedback control of linear systems subject to stochastic disturbances. Stationary Kalman filter, separation theorem.

304-411A COMMUNICATION SYSTEMS 3(3-0-6). (Prerequisites: 304-303A,B or 304-308A, 304-305B or 189-384B.) Review of power spectral analysis and auto correlation; amplitude, single side-band modulation and demodulation; frequency and phase modulation, modulators and demodulators; stereo FM, pulse modulation, pulse width amplitude and position modulation; time and frequency multiplexing; pulse code modulation (PCM); quantization; phase shift and frequency shift keying; noise performance of various modulation schemes; representation of noise; threshold effects in PCM and FM; probability of error for pulse systems; concept of channel capacity.

304-424A (Formerly 304-324) SMALL COMPUTER SYSTEMS 3(3-0-6). (Prerequisite: 304-221A,B or 308-210A,B. Recommended: 304-322A,B.) Basic machine structure, software specification, order code specification, assembly languages, branching mechanisms, subroutine organization, interrupt systems and interrupt programming, program statistics, peripheral device servicing, A/D and D/A programming, simple scheduling mechanisms, real-time operating system functions.

304-425B COMPUTER ORGANIZATION AND ARCHITECTURE 3(3-0-6). (Prerequisite: 304-322A,B.) Recommended: 304-424A. Components, basic computer subassemblies. Minicomputer design, microprogramming, execution control. CPU memory timing problems, look ahead systems and pipeline computers. Array processors. Special features. Virtual memory organization. I/O Architecture. Case studies of advanced computer system organization.

304-443A INTEGRATED CIRCUIT TECHNOLOGY 3(3-0-6). (Prerequisite: 304-333A,B.) Alloyed contacts, diffusion techniques, diffusion theory, four point probe, epitaxial growth, silicon dioxide formation, photolithography, window opening, selected metallization, diode and transistor fabrication, junction depth determination, junction capacitance for general profile, fabrication of monolithic integrated circuits, isolation, junction capacitors, diffused resistors, mask making, device mounting, thin film passive components, thick film components, integrated circuit layout, theory of pnpn devices and unijunction transistors, theory of field effect transistor.

304-462B ELECTROMECHANICAL ENERGY CONVERSION II 3(3-0-6). (Prerequisite: 304-361A,B.) Fractional horse power motors. Solid-state motor control. The structure of machines including saliency, saturation and winding harmonics. Electromechanical transients and stability analysis.

304-463A HIGH VOLTAGE ENGINEERING 3(3-0-6). (Prerequisite: 304-351A,B or 304-356A.) Introduction to high voltage engineering. Gas discharges in uniform and non-uniform fields. Disruptive and corona discharges. Surface flashover and surface corona. Gases of high dielectric strength. Applications to basic problems of extra-high-voltage and ultra-high-voltage transmission. Corona in bundle conductors. Interference, audible noise and corona losses. Voltage distribution along insulator strings. Compact metal clad SF_6 substations. Modern high voltage laboratories. Testing techniques.

304-464B POWER SYSTEM ANALYSIS 3(3-0-6) (Prerequisite: 304-361A,B.) Steady-state and transient characteristics of three phase system components; steady-state load flow calculations in three phase networks, load distribution; faults; stability calculations in two machine systems including effects of faults and switching operations; techniques for improving stability limits.

304-470F TECHNICAL PAPER 2(0-0-6). After completion of four semesters of work, each student should consult his staff adviser for guidance in the selection of a suitable topic for a technical paper based on the student's non-university-course experience. The papers are due at the latest on entering the final semester.

304-471B ACOUSTICS 3(3-0-6). (Prerequisites: 304-302A,B, 304-352B or 304-357B.) This course is divided into three main topics: (1) TRANSDUCER DESIGN: wave fundamentals, directivity patterns, resonators and filters (muffler design), microphones and loudspeakers. (2) ENVIRONMENTAL ACOUSTICS: effects of noise on man, criteria for noise control, building acoustics, noise control outdoors. (3) UNDERWATER ACOUSTICS: communication in the sea, refraction, interference, sound channels, sonar, masking by noise.

304-472B COMMUNICATIONS TECHNOLOGY 3(3-0-6). (Prerequisite: 304-303A,B or 304-308A.) Theoretical and practical aspects of communications technology will be examined through the study of existing systems which are representative of the state of the art. Case-studies will be selected from areas such as satellite communications, radio astronomy, microwave systems, radar, television and sonar.

304-474B ELECTRONIC DESIGN 3(3-0-6). (Prerequisites: 304-322A,B, 304-303A,B or 304-308A, 304-333A,B or 304-338B. Recommended: 304-352B, 304-411A.) Analysis of complex electronic systems from the system design viewpoint. Factors affecting the choice of subsystem hardware; reliability, availability, cost of design and assembly. Identification of critical components and subsystems. The principles of electronic system design will be illustrated with examples drawn from the areas of instrumentation, television, radar, navigation and direction finding, broadband communication links, computers, and supervisory and control systems.

304-493A,B ELECTRICAL LABORATORY III 3(0-5-4). (Prerequisite: 304-392A,B. Co-requisite: 304-333A,B or 304-338B.) Each student selects a program in an area offered by the department. This program may be in the nature of a series of experiments covering some aspects of the area or a term-long project. The group size is usually two students and each student is required to present a seminar and contribute to a group technical report on a chosen topic. The director(s) of the area involved may require additional prerequisites and co-requisites by some, if not all, members of the group.

304-494A,B ELECTRICAL LABORATORY IV 3(0-5-4). (Prerequisite: 304-493A,B.) Similar to 304-493A,B. The material to be covered may be of a more open-ended nature than 304-493A,B. For diversification on the part of the student the area program chosen must be different from that of 304-493A,B.

304-499A,B ELECTRICAL LABORATORY IV 3(0-5-4). (Prerequisite: 304-392A,B; 304-333A,B.) Honours section of 304-494; similar in content to 304-494 but involving more challenging assignments.

304-501A FREQUENCY DESIGN OF LINEAR CONTROL SYSTEMS 3(3-0-6). (Prerequisite: 304-303A,B or 304-308A.) Frequency response design of linear control systems. Compensators, error constants. Sensitivity, two-degree-of-freedom design. Cascade and other multiloop designs. Feed-forward. Frequency response design of multivariable linear control systems. Decoupling. Discrete systems, sequences, convolution, difference equations. The z-transform. Sampled-data systems and their design by frequency-domain techniques.

304-502B STATE SPACE METHODS IN LINEAR SYSTEMS 3(3-0-6). (Prerequisite: 304-501A.) State representation of linear systems. The state transition matrix. System modes and Jordan forms. Controllability and observability. Transfer functions and minimal representations. State representation of discrete and sampled-data systems. Canonical forms. Modal control and pole placement by state feedback. Quadratic performance index, the Lyapunov matrix equation. Stability and Lyapunov functions. The optimal regulator problem. Dead-beat

controllers. Disturbance compensation, feedforward. Linear state observers. Optimization of output-feedback controllers for min-max eigenvalue placement or minimization of a quadratic performance index.

304-512B DIGITAL SIGNAL PROCESSING 3(1-0-6). (Prerequisite: 304-303A,B or 304-308A.) Discrete-time linear systems theory, digital filter synthesis techniques, quantization effects in digital filters, discrete Fourier transforms including FFT algorithms, high-speed convolution and correlation techniques.

304-521B DIGITAL COMMUNICATION 3(3-0-6). (Prerequisites: 304-305B or 189-384B, 304-303A,B or 304-308A.) Introduction to digital transmission, digital data and performance criteria, discussion of digital transmission facilities; basic definitions; coding and framing formats; baseband pulse modulation, pulse amplitude and pulse frequency modulation, phase shift keying; signal spectra; demodulation techniques noting problems of framing and synchronization; performance on Gaussian channel, bandlimited channel characterization, pulse dispersion, adaptive and non-adaptive equalization, Gaussian and impulsive-noise, pulse jitter, repeaters and analysis; introduction to error control, parity checking, error detection, automatic repeat request performance estimates.

304-522A STATISTICAL COMMUNICATION THEORY 3(3-0-6). (Prerequisites: 304-305B or 189-384B, 304-303A,B or 304-308A.) Optimum receiver principles; vector channels and decision regions, matched filters, error evaluation for various signal sets; channel capacity, important channel models, non-white Gaussian noise, bandpass channels, random amplitude and phase, linear (amplitude, single side-band double side-band) modulation, twisted modulation, frequency modulation, phase modulation, bandwidth and weak noise suppression, phase-lock loop.

304-529A IMAGE PROCESSING AND COMMUNICATIONS 3(3-0-6). (Prerequisites: 304-221A,B, 304-303A,B or 304-308A.) Psychophysics of vision, properties of images; sampling, digitizing, and displaying images; geometric and algebraic processing, spatial filtering, image coding and transmission; binary image analysis, segmentation, descriptions of lines and shapes; representation, linguistic methods, software and hardware systems, applications; scene analysis.

304-531B REAL-TIME SYSTEMS 3(3-3-3). (Prerequisite: 304-322A,B, and 304-424A.) Real-time engineering applications of computers to on-line control communication systems and data acquisition. This course is concerned with aspects of hardware, software, the hardware-software interface and their integration into a completed system. The course requires the completion of individual or group projects using one of the department's mini- or micro-computers.

304-532A COMPUTER GRAPHICS 3(3-3-3). (Prerequisite: 304-424A.) Introduction to computer graphics systems and display devices: core or disc refreshed, storage tube, scan conversion systems; graphical input and interactive graphical techniques — light pen, joystick, Rand tablet; display files: graphics languages and data structures; 2D transformations; 3D computer graphics, hidden line removal and shading; graphics system design; applications. The course will consist of lecture material as well as a laboratory project involving the preparation and running of graphics programs on the PDP-15 and IBM 360 systems. (Alternate years, next given 77/78.)

304-533B COMPUTERIZED TEXT PROCESSING 3(3-0-6). (Prerequisite: 304-424A.) Data editing by batch and online entry; manipulation of text and data. Concepts of type design and typography. Typesetting practice and technology. Production technique in printing industry as applied to letter, book and journal publication. Applications of numerical control techniques and computerized decision making to printing, particularly typesetting. (Alternate years, next given 76/77.)

304-543B NUMERICAL METHODS IN ELECTROMAGNETICS 3(3-0-6). (Prerequisite: 304-351A,B or 304-356A.) Mathematical representation of fields. Discrete approximations for continuous differential and integral operators. Methods for solving deterministic and eigenvalue problems by direct and iterative means.

304-561A ELECTRIC MACHINE DESIGN 3(3-0-6). (Prerequisite: 304-361A,B.) The output equations of electromagnetic apparatus. Specific electric and magnetic loading. Magnetic circuits. Time constants and power gain. Windings including pole amplitude modulation. Leakage inductances. Commutation interpoles and compensation. Per-unit values. (Alternate years, next given 77/78.)

304-562A. CONTINUUM ELECTROMECHANICS 3(3-0-6). (Prerequisite: 304-351A,B or 304-356A.) Quasi-static electromagnetic field equations. Field transformation in moving co-ordinate systems. Boundary conditions and constitutive relations for moving media. Magnetic diffusion and charge relaxation in moving media. Maxwell's stress tensor for the evaluation of force densities. Electromechanics

of elastic solids and Newtonian fluids. Application of theories to magneto-hydrodynamics, electro-hydrodynamics, magnetic pumps, linear induction motor and magnetic levitation. (Alternate years, next given 76/77.)

304-564B CONTROL RECTIFIER CIRCUITS 3(3-0-6). (Prerequisite: 304-333A,B or 304-338B.) Simple polyphase rectifiers. Thyristor characteristics. Fully and semi-controlled bridges. Interphase transformers. Commutation, regulation and equivalent circuits. Harmonic content. Active loads. Cycloconverters. (Alternate years, next given 77/78.)

304-565B INVERTERS AND CHOPPER CIRCUITS 3(3-0-6). (Prerequisite: 304-333A,B or 304-338B.) Properties of circuits employing the forced commutation of thyristors to perform a switching function. Static and dynamic properties of thyristors and diodes. Constant voltage and constant current inverters, three phase inverters. Choppers. Motor loads. (Alternate years, next given 76/77.)

304-572A LASER ELECTRONICS 3(3-0-6). (Prerequisites: 198-271B, 304-332B or 304-337B.) Review of quantum mechanical and statistical mechanical concepts and techniques. Principle of amplification by stimulated emission of radiation; analysis of resonant cavity and travelling wave maser amplifiers; coherence, stability and noise; characteristics of gaseous, solid state and semiconductor junction lasers. Nonlinear effects for modulation and detection of laser beams; applications to communication, measurements, signal processing and other fields as time permits.

304-573B MICROWAVE DEVICES AND CIRCUITS 3(3-0-6). (Prerequisites: 304-592A, 304-332B or 304-337B.) Gunn diodes. LSA mode operation; Gunn oscillators. Tunnel diodes, IMPATT and TRAPATT oscillators. Parasitics in tunnel diode circuits; noise, microwave transistors: models; scattering parameter design of distributed amplifiers. High frequency diodes: limitations in sensitivity, noise figure and dynamic range. Varactor multipliers. Parametric amplifiers: noise in uncooled amplifiers; use of circulators in parametric amplifiers. (Alternate years, next given 76/77.)

304-575B OPTICAL AND MAGNETIC PROPERTIES OF SOLIDS 3(3-0-6). (Prerequisites: 304-352B or 304-357B, 304-332B.) Classical and quantum theories of polarization. Band theory of solids. Dispersion relations. Tensor description of anisotropic materials. The ray ellipsoid. Double refractions, birefringence dichroism, piezoelectricity, ferroelectricity. Classical and quantum theories of magnetization. Diamagnetism, paramagnetism, ferro- and ferri-magnetism. Magnetic domains. Ferrites and Garnets. Non-reciprocal microwave devices and magneto-optic devices which exploit crystal anisotropy. (Alternate years, next given 76/77.)

304-579A SEMICONDUCTOR DEVICES AND MODELS 3(3-0-6). (Prerequisite: 304-333A,B or 304-338B.) Systematic methods for obtaining useful models which relate device physics to terminal behaviour. The pn junction diode, junction-gate and MOS field-effect transistors, bipolar transistor: idealized devices, practical device geometries, applications. The transistor switch. Determination of model parameters by measurement. (Alternate years, next given 76/77.)

304-592A MICROWAVE THEORY AND TECHNIQUES 3(3-0-6). (Prerequisite: 304-352B or 304-357B.) Transmission lines and waveguides, surface waveguides, microwave circuit theory, impedance matching and transformation, passive microwave devices, resonators, periodic structures and filters, microwave antennas.

304-593B ANTENNAS AND PROPAGATION 3(3-0-6). (Prerequisite: 304-352B or 304-357B.) Near and far field behaviour or radiators; antennas as a boundary value problem; practical antenna parameters; wire antennas, antenna arrays, aperture methods of antenna analysis; measurement of input impedance, field patterns, gain and noise; point-to-point propagation, fading beyond horizon and long distance propagation, ionospheric, atmospheric and earth's surface considerations; tropospheric scatter.

304-596B COHERENT WAVE OPTICS 3(3-0-6). (Prerequisite: 304-352B or 304-357B.) Introduction to wave optics. Diffraction theory and geometrical optics including the Kirchoff-Huygens diffraction integral, Fermat's principle and Hamiltonian Formulations of Ray Optics. Lenses and lens waveguides. Optical Fourier transform and spatial filtering. Gaussian beams. Holography. Propagation characteristics of optical fibres and dielectric waveguides. Thin film (or slab) optical waveguides. Discussion of optical communication systems. (Alternate years, next given 77/78.)

304-602A OPTIMAL CONTROL THEORY 4(3-0-9). (Prerequisite: 304-404A or 304-502B.) Basic concepts of static optimization. Variational solutions for discrete — and continuous-time control problems. Pontryagin's maximum principle. Dynamic programming. Computational algorithms. Singular control problems. The linear regulator problem.

304-603B ESTIMATION AND STOCHASTIC CONTROL 4(3-0-9). (Prerequisites: 304-612A, 304-502B.) Properties of estimators; linear regression. The innovations process. Innovations approach to optimal linear filtering for continuous-time and discrete-time processes. Smoothing and prediction. Properties of the Kalman filter. Optimal stochastic control of linear systems with direct state

measurements. The certainty equivalence principle. Minimum-variance control. Estimation and control of discrete linear systems described by ARMA models. Stochastic control of nonlinear systems.

304-604A PARAMETER IDENTIFICATION AND ADAPTIVE CONTROL 4(3-0-9). (Prerequisite: 304-603B.) Least-squares, maximum likelihood and Bayesian estimates. Hypothesis testing. Identification of discrete systems described by ARMA models using least-squares, generalized least-squares and maximum likelihood. Instrumental variable methods. Stochastic approximation. Use of the extended Kalman filter. Bayesian estimation of systems taken from a finite population. Estimation of noise covariances. Adaptive control of discrete systems using one-step-ahead control laws, enforced separation and open-loop-feedback-optimal control (OLFO) laws. Use of specially-designed inputs. (Alternate years, next given 76/77.)

304-612A RANDOM PROCESSES 4(3-0-9). (Prerequisite: 304-305B or 189-384B.) Markov processes, Markov chains, correlation functions and spectra, renewal processes, queues, queuing networks.

304-613B COMPUTER-AIDED NETWORK ANALYSIS AND DESIGN 4(3-0-9). (Prerequisite: 304-303A, B or 304-308A.) Computer-aided techniques for the DC, transient and frequency-domain analysis of linear and nonlinear electronic networks; methods of sensitivity analysis; elementary concepts in optimization theory; application of optimization techniques to circuit design. (Alternate years, next given 77/78.)

304-614A NETWORK SYNTHESIS 4(3-0-9). (Prerequisite: 304-303A,B or 304-308A.) Properties of positive real functions; determination of system functions; synthesis of driving-point functions; syntheses of lossless two-ports and RC two-ports; approximation problems; synthesis of active networks. (Alternate years, next given 76/77.)

304-620A INFORMATION THEORY AND CODING 4(3-0-9). (Prerequisite: 304-305B or 189-384B.) Measure of information, limitations of measure, characterization of noisy channels, channel coding and capacity. Estimates for some real channels, source coding revisited (rate distortion), error coding techniques — real and imaginary, feedback and automatic repeat request channels. This course is intended to give the student an insight into the concepts and limitations of Information Theory along with a survey of current practice in error-correcting coding. (Alternate years, next given 77/78.)

304-622B ADVANCED COMMUNICATIONS SYSTEMS ANALYSIS 4(3-0-9). (Prerequisite: 304-522A.) This course will allow the student to study the foundations required for modelling advanced communication systems. Analysis of specific classes of systems such as telephone, satellite, troposcatter, microwave for both analog and digital data. (Alternate years, next given 77/78.)

304-625B ARTIFICIAL INTELLIGENCE 4(3-0-9). (Prerequisite: 304-529A.) Definition, models for an artificial intelligence, data structures, heuristic programming, learning, pattern recognition, man-machine interaction, practical applications and study of selected research topics. (Alternate years, next given 77/78.)

304-628B COMPUTER COMMUNICATIONS NETWORKS 4(3-0-9). (Prerequisites: 304-411A and 304-424A, or 304-521B.) Classification of networks, voices, data, line-switching, message switching, packets; characterization of information sources; computer interface, terminal interface, network interface, queueing models, queueing networks, capacity versus delay; network system components, multiplexers, concentrators; topological design problems and algorithms; network control and characterization; tree networks, reliability; non-tree network designs. (Alternate years, next given 76/77.)

304-636B REAL-TIME OPERATING SYSTEM DESIGN 4(3-0-9). (Prerequisite: 304-531B.) This course is intended for students interested in real-time applications of small computers. The course includes a study of three existing real-time operating systems as well as a design project. The course content includes the following: Task scheduling mechanisms, I/O organization, bulk storage organization, incorporation of service routines. Intercomputer communication, task co-ordination, multiple computer operating systems. (Alternate years, next given 76/77.)

304-637B COMPUTER SYSTEMS ANALYSIS 4(3-0-9). (Prerequisite: 304-531B.) Computer system specification, hardware-software trade-offs, selection of hardware components, problem solutions using interconnected computers, choice of programming languages, structured programming, technical organization and management. The course includes three case studies and a design project. (Alternate years, next given 77/78.)

304-638A ADVANCED COMPUTER DESIGN 4(3-0-9). (Prerequisite: 304-531B.) This course is intended for graduate students with a good knowledge of computer organization, structure and architecture and some knowledge of microprogramming. Topics in hardware technology include functional logic building blocks, arithmetic and non-arithmetic processors, memory utilization and storage management, sequencing subsystems, transmission and exchange. Determination of expected performance by simulation; computer-aided design. Specific examples of solutions to computer design problems. Selected topics on novel computer organizations such as array, cellular and variable-structure computers. (Alternate years, next given 76/77.)

304-641A APPLIED ELECTROMAGNETIC THEORY 4(3-0-9). (Prerequisite: 304-592A or 304-593B.) Mathematical techniques, analytical and numerical, for solving E. M. boundary value problems. Maxwell's equations, wave dispersion, waves in gyrotropic media, Huygen's principle and Fresnel diffraction, Babinet's principle; Green's functions and integral equations, angular spectrum of plane waves, cylindrical and spherical wave functions, perturbational and variational techniques. Waveguide, antenna, scattering and diffraction problems.

304-647A FINITE ELEMENTS IN ELECTROMAGNETICS 4(3-0-9). (Prerequisite: 304-543B.) Finite elements for the Helmholtz equation in the plane and in space. Elements for axisymmetric problems. Isoparametric and curvilinear elements; elements for nonlinear problems. Integral equations and the solution of antenna problems. Finite elements in parabolic problems. (Alternate years, next given 77/78.)

304-662A ELECTRIC MACHINE DYNAMICS 4(3-0-9). (Prerequisites: 304-361A,B, 304-502B.) Review of electric machine models. State-space formulation of nonlinear differential equations. Solutions through numerical integration, constant speed linearization. Models of control elements, loads, prime-movers, voltage regulators, transmission networks. State equations of integrated power system. Modal analysis of multimachine power system. Operating point stability. Transient stability analysis. Electromechanical resonance. (Alternate years, next given 77/78.)

304-663X HVAC POWER TRANSMISSION. 4 Credits. Design considerations of EHV and UHV power transmission systems: audible noise, radio interference, environmental aspects of transmission lines. Coordination of system over-voltages with external and internal insulation strengths leading to economic insulation structures based on quantitative evaluation of reliability.

304-664Y HVDC POWER TRANSMISSION. 4 Credits. Principles of HVDC power, transmission: HVDC transmission circuits, bridge convertor operation, thyristor valve developments, control of HVDC systems, protection of lines and converter stations, harmonic filtering, modelling techniques for performance studies.

304-665X SUBSTATION APPARATUS. 4 Credits. Description and analysis of major apparatus used in modern power systems: circuit breakers, switches, bushings. Electrical connection of substations; principles of equipment selection based on stresses, reliability and economic requirements. Substation protection. Physical arrangement of substations.

304-666Y POWER SYSTEM OPERATION. 4 Credits. Power system optimality criteria: economic, environmental, reliability factors. Short and long-term load forecasting; simulation of river flows; economic operations of hydroelectric thermal and hydro-steam systems. Planning of additional equipment by the global and marginal approaches. Siting of new plants. Planning of interconnections; maintenance scheduling.

304-667Y MODERN TECHNIQUES FOR POWER SYSTEM ANALYSIS. 4 Credits. Mathematical descriptions of power systems suitable for computer analysis, and solutions algorithms. Topics will include: matrix algebra, incidence and network matrices, sparse matrix techniques, phase and component representation, short circuit studies, Diakoptics, load flow studies, transient and dynamic stability studies, contingency analysis, state estimation, system identification.

304-677A,B EXPERIMENTAL TECHNIQUES IN SOLID STATE 4(0-6-6). (Prerequisite: 304-332B or 304-337B.) Experimental laboratory project in solid state involving the following. Techniques of laboratory preparation, fabrication and orientation of solid state samples and structures for experimental study. Use of special laboratory research apparatus. Measurement of electronic, optical and structural properties of samples and structures. Evaluation and analysis of electronic behaviour and performance. Interpretation of relevant physical processes and phenomena.

304-678A SPECIAL TOPICS IN SOLIDS I 4(3-0-9). (Prerequisite: 304-332B or 304-337B.) Discussion of topics in semiconductor electronics and electronic properties of materials in areas of current research to the department.

304-679B SPECIAL TOPICS IN SOLIDS II 4(3-0-9). (Prerequisite: 304-332B or 304-337B.) Dielectric properties and molecular structure of solids and liquids. Dielectric theory and applications.

304-681A,B COLLOQUIUM IN ELECTRICAL ENGINEERING, 4 credits. Directed reading, seminar and discussion course in various subjects of current interest in electrical engineering research.

304-685B HIGH VOLTAGE ENGINEERING 4(3-0-9). (Prerequisite: 304-351A,B or 304-356A.) Electrical discharges in gases; uniform and non-uniform fields; corona discharges; the spark mechanism. Generation and measurement of high direct, alternating and impulse voltages. (Alternate years, next given 77/78.)

304-688A,B 304-689A,B RECENT ADVANCES IN ELECTRICAL ENGINEERING, 4 credits. Course content suited to the area of specialization of the lecturer.

5.6 DEPARTMENT OF MECHANICAL ENGINEERING

Chairman
J.W. Stachiewicz, M.Eng(McG.), Eng.

Professors
D.R. Axelrad, M.Eng.,(Sydney), D.Eng.Sc. (Tech. U. Vienna), Eng.
W.Bruce, M.A.Sc. (Tor.), Eng.
J.H.S. Lee, M.Sc.(M.I.T.), Ph.D.(McG.)
B.G. Newman, M.A.(Cantab), Ph.D.(Sydney), Eng.

Associate Professors
A.M. Ahmed, B.Sc.(Dacca), Ph.D.(McG.)
G.G. Bach, Ph.D.(McG.)
J.C. Cherna, Dipl.Eng.(Swiss Fed. Inst.),Eng.
G.I.Fekete, M.Eng., Ph.D.(McG.),Eng.
J.M. Forde, B.Eng., M.Eng,(McG.),Eng.
R. Knystautas, M.Eng., Ph.D.(McG.)
L.Kops, D.Sc.Eng.(Krakow Tech. U.),Eng.
C.L. Murphy, M.Eng., Ph.D.(McG.),Eng.
M.P. Paidoussis, B.Eng.(McG.), Ph.D.(Cantab.), Eng.
J.D. Pfeiffer, B.E.E.(Cornell), Eng.
J.W. Provan, B.Sc.(Strathclyde), M.Sc., Ph.D. (Colo.)
A.L. Thompson, B.A.(Bishop's), Ph.D.(McG.)
J.H.T. Wu, M.A.Sc.(Tor.), Ph.D.(McG.)
P.J. Zsombor-Murray, M.Eng., Ph.D.(McG.),Eng

Assistant Professors,
C. Guirao, M.Sc.(Paris), Ph.D.,(Calif.)
R. Hoffman, M.A.Sc.(Tor.), Ph.D.(Sask.), Eng.

Special Lecturers and Laboratory Superintendents
V. Fangor, J. Kelly, O. Muehling, L. Vroomen

Associate Members
D. Atack, B.Sc., Ph.D.(McG.)
G.V.Bull,Ph.D.,Eng.,Space Research Corporation
D. Burke, B.Eng., M.D., Montreal General Hospital
R.G. Edwards, Eng., Canadair Ltd.
H. Luckert, Ph.D., Space Research Corporation
J. Miller, M.D., Montreal General Hospital

Part-Time Staff
D. May, Eng., J. Rushbrook, Eng.

The prospective student, when trying to decide which branch of engineering to enter, may often ask himself this question: For what sort of a career will a Mechanical Engineering degree prepare me?

This question can best be answered by looking at the positions which our graduates hold today, and it is very revealing to see the extremely broad range of occupations in which they are engaged.

Typically, the first jobs after graduation will be in the design office, often in the estimating department, of a corporation where the young graduate will get an apprenticeship in the practical aspects of engineering design, the importance of cost factors, etc.

As he gains experience he will gradually be given more responsibility, be put in charge of complete projects and supervise the work of junior engineers. Finally, if he has the ability, he may become a section head and gradually be promoted to plant manager, vice-president or to other executive positions. This is a typical progression of a successful engineer in a large corporation, but many of our graduates follow different routes.

Some elect to take graduate studies to prepare themselves for advanced work, usually in research establishments, in consulting firms or in companies which have their own research and development departments; a growing number become interested in bio-mechanical engineering (some even take a medical degree); others gravitate towards systems engineering with heavy reliance on computer applications; some, after a few years of experience, form their own companies, often as Consulting Mechanical Engineers for building services (heating, air conditioning). Fields of engineering in which Mechanical Engineering graduates work, apart from those traditionally associated with mechanical engineering, include aeronautics, aerodynamics and aerospace, nuclear engineering, heat transfer equipment, transportation, construction, computers, industrial engineering and many, many others.

One may ask how is it possible to devise a curriculum which will satisfy such diverse needs, and the only answer is that we must first of all put a heavy stress on the knowledge of fundamental disciplines such as mathematics, physics, mechanics and thermodynamics, and then teach the students the basic approach to the synthesis and application of this knowledge towards the solution of practical problems.

The latter is done in the sequence of design and experimental engineering courses, which include project work involving creative design, and also actual construction and testing of equipment built by the students.

A broad range of interests may be satisfied by selecting appropriate elective courses from among those offered with a specific subject concentration, such as management, industrial engineering, computer science, bio-engineering, aerodynamics, systems engineering, etc. Faculty advisers will assist the student in these selections and approve their individual programs.

The Department also offers an Honours Program which is particularly suitable for those with a high aptitude in mathematics and physics and which gives a thorough grounding in the basic engineering sciences. The electives in this program can be utilized to take courses with a more applied engineering orientation or, if preferred, to obtain even more advanced training in applied mathematical and physical sciences.

Our diverse and well equipped laboratories include the machine tool laboratory where students learn modern production techniques and familiarize themselves with precision manufac-

turing equipment including numerically controlled machine tools; aerodynamics and gas dynamics laboratories containing several subsonic and supersonic wind-tunnels; dynamics and controls laboratory permitting study of dynamic behaviour and control of systems; energy transport and conversion laboratories which feature various types of engines and heat flow experiments; a laser laboratory where various applications and designs of lasers are studied; and finally a data-processing control computer (DATAC) laboratory to which much of the experimental equipment is connected, and in which students learn the most modern techniques of automatic data acquisition and processing, and computer graphics.

While the program is demanding, it still seems to leave time for many extra-curricular activities and our students are active in such professional societies as the CSME (Canadian Society for Mechanical Engineering, a constituent society of the Engineering Institute of Canada), the SAE (Society of Automotive Engineers) and in various campus organizations.

The relations between the Faculty staff and the students are extremely close and there are frequently organized social functions in which students and professors meet over a glass of beer or wine to exchange views and to get to know each other better.

CURRICULUM FOR THE B.ENG. DEGREE IN MECHANICAL ENGINEERING (REGULAR)

Required courses

		Course Credit	
NON-DEPARTMENTAL SUBJECTS			
189-261A,B	Linear Algebra and Differential Equations I	3	
189-262A,B	Linear Algebra and Differential Equations II	3	
189-263A,B	Advanced Calculus	3	
189-264A,B	Introduction to Boundary Value Problems	3	
303-207A,B	Solid Mechanics	4	
303-290A	Mechanics I	4	
303-291A,B	Mechanics II	3	
304-281A,B	Electric Power	3	
304-383A,B	Electronics	3	
308-208A,B	Computers in Engineering	2	31
MECHANICAL ENGINEERING SUBJECTS			
305-214B	Dynamics of Mechanisms	3	
305-240A	Thermodynamics I	3	
305-241B	Thermodynamics II	3	
305-260A	Machine Tool Laboratory	2	
305-261B	Measurement Laboratory	2	
305-291A	Graphics	3	
305-292A,B	Design I	3	
305-305A	Engineering Statistics	2	
305-315A,B	Dynamics of Engineering Systems I	3	
305-321B	Mechanics of Deformable Solids	3	
305-330A	Fluid Mechanics I	3	
305-346A,B	Heat Transfer	3	
305-362B	Mechanical Laboratory I	2	
305-393B	Design IIa	3	
305-394A	Design IIb	3	
305-417A,B	Systems Control	3	
305-463D,F	Mechanical Laboratory IIa	4	48

Elective Courses

TECHNICAL ELECTIVES			
305-343A	Energy Conversion	3	
305-372A	Machining Processes	3	
305-411B	Systems Control II	3	
305-418B	Measurement Engineering	3	
305-419B	Engineering Applications of Lasers and Holography	3	

305-431B	Gas Dynamics	3
305-434B	Turbomachinery	3
305-435A	Jet Propulsion	3
305-447A	Combustion	3
305-471B	Industrial Engineering	3
305-473B	Production Systems	3
305-474B	Operations Research	3
305-475A	Numerical Control of Machine Tools	3
305-495A	Design IIIa	3
305-496B	Design IIIb	3
305-497B	Value Engineering	3
305-515A	Industrial Aerodynamics	3
305-520B	Statistical Mechanics	3
305-533B	Aerodynamics: Ideal Fluid Theory	3
305-560B	Biomechanics of Tissues	3

Approximately five courses to be selected from those offered by the Department or from other suitable undergraduate or graduate courses. 15

GENERAL ELECTIVES

*Two or three courses 6

Total 100

*Students who have not taken a course in material science at the college level must include it in their university program.

CURRICULUM FOR THE B.ENG. DEGREE IN MECHANICAL ENGINEERING (HONOURS)

Required Courses		**Course Credit**	
NON-DEPARTMENTAL SUBJECTS			
189-261A,B	Linear Algebra and Differential Equations I	3	
189-263A,B	Advanced Calculus	3	
189-267A,B	Linear Algebra and Differential Equations II	3	
189-269A,B	Introduction to Boundary Value Problems	3	
189-385A	Complex Variables	3	
198-321A	Modern Physics	3	
303-290A	Mechanics I	4	
303-293B	Mechanics II H	3	
304-281A,B	Electric Power	3	
304-383A,B	Electronics	3	
308-208A,B	Computers in Engineering	2	
308-350A,B	Methods of Numerical Analysis	3	36
MECHANICAL ENGINEERING SUBJECTS			
305-240A	Thermodynamics I	3	
305-261B	Measurement Laboratory	2	
305-319B	Mechanics of Systems	3	
305-330A	Fluid Mechanics I	3	
305-342A	Statistical Thermodynamics	3	
305-364A	Mechanical Laboratory I H	2	
305-365B	Mechanical Laboratory II H	2	
305-403D	Thesis	6	
305-404B	Thesis	3	
305-422A	Continuum Mechanics	3	
305-423B	Theory of Elasticity	3	
305-452A	Mathematical Methods in Engineering I	3	
305-453B	Mathematical Methods in Engineering II	3	39

Elective Courses

TECHNICAL ELECTIVES

Five courses to be selected from those offered by the Department or from other suitable graduate or undergraduate courses. 15

GENERAL ELECTIVES

Three courses 9

Total **99**

Courses Offered By The Department

305-214B DYNAMICS OF MECHANISMS 3(3-1-5). (Prerequisite: 303-290A.) First principles of analysis; vector geometry; motion; position; displacement; velocity; acceleration; force; inertia and its effects. Kinematic and dynamic analysis of rigid bodies in pure rotation and in pin-connected systems; dynamic balance. The engine complex. Rigid bodies in rolling contact; planetary gear-trains. Bodies in sliding contact; lower and higher sliding pairs. Cam analysis. Emphasis will be placed on graphical methods of solution.
Professor Ahmed

305-240A THERMODYNAMICS I 3(3-1-5). Basic concepts: macroscopic vs. microscopic point of view; states and processes; conservation and transformation of energy. Phase equilibrium; equations of state; thermodynamic properties. Work and heat. First law of thermodynamics; energy equations; internal energy; enthalpy; specific heat of ideal gases. Thermodynamic processes: reversibility, polytropic processes, applications of first law. Second law of thermodynamics. Entropy changes in thermodynamic processes: principle of increase of entropy. Basic power and refrigeration cycles.
Professor Bruce

305-241B. THERMODYNAMICS II 3(3-1-5). (Prerequisite: 305-240A.) Irreversibility and availability, Gibbs and Helmholtz functions. Maxwell relations: generalized thermodynamic relations and charts; equations of state; Clapeyron equation, Joule-Thomson coefficient, volume expansivity and isothermal and adiabatic compressibility. Ideal and real gas and vapour mixtures, psychrometry and air-conditioning processes. Reactive mixtures, stoichiometry of fuels, flame temperatures, dissociation and chemical equilibrium. Modified and improved power and refrigeration cycles.
Professor Bruce

305-260A MACHINE TOOL LABORATORY 2(2-3-1). Basic machine tool laboratory measurements such as measurements of flatness, straightness, length, angle, surface texture, etc. Instruction and practice in the construction, operation and care of machine tools. Basic and advanced operating functions of lathes, shapers, drilling, milling and grinding machines. Making of small assemblies by individual students on machines tooled up for one-off jobs and for limited production runs. Introduction to numerical control.
Mr. Muehling and Staff

305-261B MEASUREMENT LABORATORY 2(2-3-1). (Co-requisite: Knowledge of Fortran programming.) Basic experimental laboratory measurements, such as measurement of temperature, pressure, force, torque, small time intervals, velocity, acceleration, flow. Criteria for selection of instruments. Introduction to automatic data acquisition and processing using the DATAC Computer Laboratory, real time programming.
Mr. Vroomen

305-290A GRAPHICS 2(2-2-2). Descriptive geometry, pictorial and working drawings and conventions. Computer graphics: simple plotting, auxiliary view and general perspective transformation, contour mapping and introduction to kinematic animation. Drafting room and computer laboratory exercises are assigned. This course is intended for Civil Engineering students.
Professor Zsombor-Murray

305-291A GRAPHICS 3(3-3-3). Descriptive geometry, pictorial and working drawings and conventions. Computer graphics: simple plotting, auxiliary view and general perspective transformation, contour mapping and introduction to kinematic animation. Drafting room and computer laboratory exercises are assigned. During the last three to four weeks, students will be assigned a project involving simple mechanical design and/or computer graphics.
Professor Zsombor-Murray

305-292A,B DESIGN I 3(3-1-5). (Pre- or co-requisite: 305-260A, 305-291A or equivalent.) Introduction to design. Problem formulation; idea conception; feasibility study; preliminary design; computer-aided design; optimal design; reliability; hardware, etc. Manufacturing methods and processes; engineering materials. The student's creative ability will be developed by having him participate in a number of design projects. Case-study methods will be used to analyse actual design projects.
Professor Fekete

305-305A ENGINEERING STATISTICS 2(2-1-3). (Prerequisite: 189-261A,B.) Combinatorial analysis. Concept of random variable; distribution function; mean; variance; correlation; Binomial, Poisson, Normal, Uniform, Student's T, and F distributions. Law of large numbers; central limit theorem. Point and interval estimation; method of maximum likelihood. Hypothesis testing; goodness of fit. Experimental design: analysis of variance; regression analysis. Stochastic processes.
Professor Bach

305-315A,B DYNAMICS OF ENGINEERING SYSTEMS I 3(3-1-5). (Prerequisite: 303-291A,B.) Free and forced vibrations of linear, one degree of freedom, damped and undamped systems. Applications to vibration transmission and isolation, vibration of beams, whirling of shafts. Multi-degree of freedom systems, coupled vibrations, distributed systems. Modelling of dynamic systems, transfer functions, linearization and lumping, block diagrams.
Professor Forde

305-319B MECHANICS OF SYSTEMS 3(3-1-5). (Prerequisite: 303-293B. Pre- or co-requisites: 189-269A,B and 308-350B.) Langrangian and Hamiltonian dynamics. Variational methods. Discrete linear systems; classical and numerical solutions for conservative and non-conservative systems; matrix function methods. Electrical-mechanical-acoustical analogues. Stability considerations and closed-loop systems. Vibration of distributed parameter systems. Energy methods. Non-linear vibrations; the phase plane and other methods of solution.
Professor Paidoussis

305-321B MECHANICS OF DEFORMABLE SOLIDS 3(3-1-5). (Prerequisite: 303-207A,B.) Modern phenomenological theories of the behaviour of engineering materials. Stress and strain concepts and introduction to constitutive theory. Applications of theory of elasticity and thermoelasticity. Introduction to plasticity. Deviatoric stress and strain. Introduction to linear viscoelasticity. Simple mechanical models and the nature of viscoelastic behaviour.
Professor Axelrad

305-330A FLUID MECHANICS I 3(3-1-5). (Prerequisite: 189-264B.) Review of relevant mechanics and thermodynamics: fluid properties; stress in a continuum; fluid kinematics; rates of strain, rotation. Control volume analysis; conservation of mass and of linear momentum; Euler and Bernoulli equations; introduction to Navier-Stokes equations. Dimensional analysis and dynamical similarity. Conservation of energy; compressible flow; speed of sound, flow with area change. Laminar and turbulent boundary layers. Turbulent jets, hydrodynamic lubrication.
Professor Newman

305-342A STATISTICAL THERMODYNAMICS 3(3-1-5). (Prerequisite: 305-240A.) Classical and quantum mechanical descriptions of molecules, phase space and fundamental postulates of statistical thermodynamics. Gibbsian ensembles and thermodynamic functions, molecular interpretations of the laws of thermodynamics. Simple applications of statistical thermodynamics.
Professor Knystautas

- **305-343A ENERGY CONVERSION 3(2-2-5).** (Prerequisite: 305-241B.) Principles of energy conversion; irreversible thermodynamics, unified conversion, plasma, electrochemical and semiconductor theory. Applications to thermoelectric, thermionic, photovoltaic, M.H.D., fuel cells and other conversion systems. Discussion of energy sources and conversion devices for particular applications, i.e.: isolated systems, power stations, transportation, etc.
Professor Murphy

305-346A,B HEAT TRANSFER 3(3-1-5). (Prerequisite: 189-264B.) Steady state conduction with and without heat generation, extended surfaces. Unsteady state conduction in plates, cylinders and spheres. Convective heat transfer, boundary layer equations, dimensionless parameters, analogy between momentum, heat and mass transfer. Natural convection. Heat exchangers. Radiant heat transfer, black and grey body radiation. Interchange factors.
Professor Stachiewicz

305-362B MECHANICAL LABORATORY I 2(0-3-3). (Prerequisite: 305-261B. Candidates must have also completed at least 40 credits worth of courses in the Mechanical Engineering Program.) Experiments illustrating theory covered in courses on thermodynamics, mechanics, fluid dynamics, heat transfer.
Professor Hoffman and Staff

305-364A MECHANICAL LABORATORY I H 2(0-3-3). (Prerequisite: 305-261B. Candidates must also have completed at least 30 credits worth of Mechanical Engineering Program). Selected laboratory assignments integrated with the respective lecture courses.
Professor Knystautas

305-365B MECHANICAL LABORATORY II H 2(0-3-3). (Prerequisite: 305-364A.) Continuation of 305-364A.
Professor Knystautas

- **305-372A MACHINING PROCESSES 3(2-2-5).** (Prerequisite: 305-260A.) Mechanics of metal cutting: chip formation, cutting forces and energy considerations; action of cutting fluids; thermal aspects of cutting; vibrations in cutting. Importance of the machine-tool. Machinability, tool wear and tool life, economical criterion for the selection of cutting parameters. Conventional machining operations; mechanics of grinding; other abrasive processes. Unconventional machining processes: electro-discharge, electro-chemical, laser machining — their principles and areas of application. Effect of machining practice on surface integrity.
Professor Kops

305-393B DESIGN IIa 3(2-4-3). (Prerequisite: 305-292A,B. Pre- or co-requisite: 303-207A,B.) Continuation of Design I, introducing loading and stress calculations, component part design, power transmission and energy storage, friction, lubrication and wear, design using plastic materials, etc. Design projects will involve the application of knowledge acquired in the lectures and in the prerequisite courses to the solution of engineering design problems.
Professor Pfeiffer & Staff

304-394A DESIGN IIb 3(1-5-3). (Prerequisite: 305-393B.) Students will work in small groups on selected design projects with consultation by the staff. Lecture topics: use and selection of mechanical components, special purpose mechanisms, functional design of machine elements.
Professor Pfeiffer & Staff

305-403D THESIS (HONOURS) 6(0-6-12). (Prerequisite: Candidates must have completed courses in the Mechanical Engineering Program weighted at 60 credits (minimum)). This course, together with course 305-404B, involves a research or design project undertaken by each student, encompassing interrelated aspects of engineering theory and requiring a theoretical and/or experimental investigation. The student will work under the supervision of one or more staff members; his completed work will be submitted in the form of a thesis. The grade awarded for this part of the course depends on the assessment of the quality of theoretical and/or experimental work undertaken by the student.
Professor Paidoussis and Staff

305-404B THESIS (HONOURS) 3(0-3-6). (Co-requisite: 305-403D.) This course is part of the same thesis project as for course 305-403D. The grade for this part of the course covers the orderly development and presentation of ideas, and their incorporation in the thesis.
Professor Paidoussis and Staff

- **305-411B SYSTEMS CONTROL II 3(3-1-5).** (Prerequisite: 305-417A.) Further topics in control systems engineering with emphasis on synthesis. Discrete-time systems, z-transforms. State-space representation of systems; controllability, observability, the state-transition matrix, design using modal analysis. Statistical methods. Survey of system modelling and process parameter estimation techniques. Introduction to optimal control systems. The role of computers in control systems.
Professor Hoffman

305-417A,B SYSTEMS CONTROL 3(3-1-5). (Prerequisite: 305-315A,B.) Analysis of single variable linear, lumped-parameter, stationary, deterministic, continuous data, feedback control systems. Introduction to feedback control: open-loop vs. feedback control; history, examples, characteristics and cost of feedback control. Classical approach to initially-quiescent linear systems analysis. Generalized mathematical modelling of dynamic engineering systems. Transient, steady-state and frequency response and their inter-relationship in idealized feedback control systems. Time-domain and frequency-domain, absolute and relative stability analysis: Routh-Hurwitz criterion, root-locus method, Nyquist and Bode analysis, Nichols chart. Control action and compensation to improve performance. Examples of time-domain and frequency-domain design of compensators.
Professor Ahmed

- **305-418A MEASUREMENT ENGINEERING 3(3-1-5).** (Prerequisite: 305-417A.) The aim of this course is to present in a unified manner the principles and techniques of gathering and "processing" valid and accurate "information". General principles of measurement, functional elements, transducers, systems. General performance characteristics of measurement elements and systems: sensitivity; linearity, loading effect, dynamic response, noise and feedback in measurement. General techniques of information processing, transmission and recording. Common measurement devices and their characteristics — motion, pressure, temperature, flow, heat flux measurement. Case studies. Principles developed in lectures will be illustrated by laboratory demonstrations.
Professor Ahmed

- **305-419B ENGINEERING APPLICATIONS OF LASERS AND HOLOGRAPHY 3(3-0-6).** (Prerequisite: 308-208A,B.) Wave optics, Fabry-Perot interferometer, Fresnel & Fraunhofer diffractions; laser physics, population inversion, frequency broadening, laser applications; holography principles, image position analysis, Fourier transform holograms, holography applications.
Professor Wu

305-422A CONTINUUM MECHANICS 3(2-2-5). (Prerequisite: 303-293B; Co-requisite: 189-385A.) Definition of a continuum. The Cauchy stress concept which gives the balance of forces within a material. Vector and tensor fields. Strains and kinematics of deformation. Equations of motion. Thermodynamics of continua. The basic laws for predicting the behaviour of the continuum.
Professor Axelrad

305-423B THEORY OF ELASTICITY 3(2-2-5). (Prerequisite: 305-422A.) Basic equations of elasticity and thermoelasticity. Methods of solution of two and three-dimensional problems. Dynamic problems and wave propagation in solids. Inelastic response behaviour of solids.
Professor Axelrad

- **305-431B GAS DYNAMICS 3(3-1-5).** (Prerequisite: 305-330A.) Motion of sound waves. Isentropic flow. Normal shocks. Flow in nozzles, wind tunnels and shock tubes. Oblique shocks. Prandtl Meyer Flow. Flow in inlets and over airfoils. Flow with friction and heat addition. Magnetogasdynamics. Real

gas effects. Rarefied flow. Experimental methods.
Professor Guirao

- **305-434B TURBOMACHINERY 3(2-2-5).** (Prerequisite: 305-330A.) The course covers fundamental aspects of turbomachinery in a broad and general manner that will be useful to a wide range of mechanical engineering students and is designed to provide a firm base for more detailed study at graduate level. Topics will include: general concepts and definition of turbomachinery, generalized performance study by non-dimensional analysis, basic theories of energy transfer, fluid flow problems in turbomachinery, design problems, performance matching and stability, control, testing, general problem of propulsion.
Professor Murphy

- **305-435A JET PROPULSION 3(3-1-5).** (Prerequisite: 305-330A.) Thermodynamics of open cycles; internal aerodynamics; aerothermochemistry of propellants; nozzle designs and efficiency, aerodynamics of intake diffusers; problems associated with intake design.
Professor Wu

- **305-447A COMBUSTION 3(3-1-5).** Selected topics concerned principally with combustion in prime movers, e.g. steam plants and various kinds of engines. Fundamentals of chemical kinetics of combustion reactions. Stability limits and flame speeds of laminar and turbulent diffusion flames, theories of flame propagation. Some causes and possible methods of reduction or elimination of air pollution from prime movers including effects of the physical properties and chemical composition of various fuels, fuel-air ratio, quenching, also discussion of carbon or soot formation. Method of analysis of combustion products including mass spectroscopy and gas chromatography.
Professor Thompson

305-452A MATHEMATICAL METHODS IN ENGINEERING I 3(2-2-5). (Prerequisite: Candidates must have completed courses in the Mechanical Engineering Program weighted at 60 credits (minimum).) The underlying theory and application of mathematical methods in fluid dynamics, vibration, stress and strain analysis, heat transfer, etc. The eigenvalue problem, methods in analysis.
Professor Provan

305-453B MATHEMATICAL METHODS IN ENGINEERING II 3(2-2-5). (Prerequisite: 305-452A.) Continuation of the underlying theory and application of mathematical methods in fluid dynamics, vibration, stress and strain analysis, heat transfer, etc. Spherical and cylindrical harmonics, Laplace and Fourier series and transforms, variational perturbation techniques, introduction to theory of distributions and generalized functions.
Professor Provan

305-463D,F MECHANICAL LABORATORY II 4(0-4-2). (Prerequisite: 305-362B.) A selection of laboratory projects will be offered and carried out by students working in small groups.
Professor Knystautas & Staff

- **305-471B INDUSTRIAL ENGINEERING 3(3-1-5).** (Prerequisite: 305-305A.) Factory planning, plant location, layout and services, production line techniques, methods engineering, design of work systems, measurement of performance (time study, work sampling, synthetic time data), quality control systems, maintenance, safety.
Professor Cherna

- **305-473B PRODUCTION SYSTEMS 3(2-2-5).** (Pre- or Co-requisite: 305-394B.) Production function. Concepts of system approach in production. Analysis of product design. Value Engineering. Process planning. Network planning methods. Information systems and automation; NC machine tools. Scheduling and control of operations.
Professor Kops

- **305-474B SELECTED TOPICS IN OPERATIONS RESEARCH 3(3-1-5).** (Prerequisite: 305-305A.) Introduction to the general mathematical programming problem in the context of engineering design; linear programming, queueing theory, Monte Carlo simulation. The above techniques will be used to study the optimization of engineering systems. The applications of linear programming in its various manifestations will be examined in depth.
Professor Zsombor-Murray

305-475A NUMERICAL CONTROL OF MACHINE TOOLS 3(3-2-4). (Prerequisite or co-requisites: 305-260A, 305-291A, 308-208A,B or equivalent). This course is intended to give the student as broad an exposure as possible to the technology of numerically controlled machines with emphasis on the software aspects. The student will be given a number of programming assignments some requiring him to actually machine a prototype on the NC machines in the department. The topics covered are: Introduction to NC systems. Manual programming, standard commands, canned cycles, paper tape formats. Computer aided programming (using APT), geometric definitions, programming of tool motions, loops and macros. The post processing function. NC tape verification techniques. Survey of NC hardware. Tooling and fixtures for NC. Selection of parts suitable for NC machining. Economic factors in justifying NC machines. NC and quality control. The future for NC.
Professor Hoffman and Staff

- **305-495A DESIGN IIIa 3(0-6-3).** (Prerequisite: 305-394B.) Lectures will deal with the matrix of the design process, optimization techniques, fatigue design, using conventional or power spectral analysis techniques, composite materials, reliability, factors of safety and their prediction. In the design laboratory, a project will be given to individual students or small groups in the field of

the student's interest. Four reports are required, with each student expected to produce a general arrangement drawing and design of one of the major components of the whole system in some detail. Whenever possible, special lectures will be provided by specialists in various fields of interest, either from the university staff or from industry.
Professor Pfeiffer and Mr. Edwards

305-496B DESIGN IIIb 3(0-6-3). Continuation of Design IIIa.
Professor Pfeiffer & Mr. Edwards

305-497B VALUE ENGINEERING 3(0-8-1). (Prerequisites: 305-260, 305-292 and completion of 45 credits.) Senior students from other departments may take this course by arrangement with the instructor. Value Engineering is an in-depth analysis of an industrial product or process with a view to improving its design and/or performance so that it can be produced, or perform its task, at a lower cost. This a Workshop type of course. Projects will be supplied by industrial firms and students will work together with industrial personnel, in teams of 5 or 6 . Recommendations will be submitted to company executives to be considered for implementation.
Professor Pfeiffer & Staff

305-507X NUMERICAL ANALYSIS FOR COMPUTER USERS I. Various topics from numerical analysis are selected with an eye to computer usage. Review of finite differences, interpolation and quadrature, ordinary differential equations.
Professor Bach

305-515A. INDUSTRIAL AERODYNAMICS. Characteristics of the earth's boundary layer, flow patterns around buildings and structures, their effect on the dispersal of pollutants, modeling and model testing, wind tunnel corrections, shelter provided by buildings, pressure distribution over buildings providing data for the structural designer, wind-induced oscillations of buildings and structures.
Professor Fekete

305-520B STATISTICAL MECHANICS 3(3-1-5). (Prerequisite: 305-342A.) Classical mechanics, fundamental hypothesis, H-theorem, coarse graining and contraction, Liouville equation, perturbation theory of Bogoliubov, Frieman and Sandri, the kinetic equations of Boltzmann, Fokker-Planck, Vlasov and Lenard-Balescu, the hydro-dynamic equations and transport phenomena, stochastic processes, fluctuations, the Master equation, Onsager relations, Langevin equations and Brownian motion.
Professor Lee

305-533B AERODYNAMICS: IDEAL FLUID THEORY 3(3-1-5). (Prerequisite: 305-330A.) Subsonic aerodynamics. Kinematics; equations of motion, vorticity and circulation; solutions of Laplace's equation; conformal mapping; motion around simple bodies. Two-dimensional aerofoils. Three-dimensional flows; airscrews; low and high aspect ratio wings. Supplemented by demonstrations and experiments in the laboratory.
Professor Newman

305-560B BIOMECHANICS OF TISSUES 3(3-0-6). Tissue biomechanics is the study of the response of biological tissue to forces and deformations to which it is subjected. Tissues such as bone, tendon and ligament act to transmit load and together with the contractile ability of muscle, provide a means for locomotion. The course emphasizes the fundamentals of continuum mechanics in relation to the morphological classification of various tissues. Basic principles of viscoelasticity will aid the student in understanding the rate sensitivity of biological materials. The stress-strain-time or constitutive equations for soft connective tissue components will be determined. The mechanical response of muscle tissue in the passive and stimulated states will also be examined.

305-603A,B or C. DESIGN PROJECT I
Staff

305-604A,B or C. DESIGN PROJECT II
Staff

305-605A. APPLIED MATHEMATICS I
Professor Bach

305-606B. APPLIED MATHEMATICS II
Professor Bach

305-608Y. NUMERICAL ANALYSIS FOR COMPUTER USERS II.
Professor Bach

305-609B,C. SEMINAR — candidates for Masters degree
Professor Provan

305-610A. FUNDAMENTALS OF FLUID MECHANICS.
Professors Lee and Knystautas

305-611B. STEADY COMPRESSIBLE AERODYNAMICS.
Professor Wu

305-612B. VISCOUS FLOW AND BOUNDARY LAYER THEORY.
Professor Newman

305-613A. UNSTEADY GAS DYNAMICS.
Professors Knystautas & Lee

305-614B. NON-EQUILIBRIUM GAS DYNAMICS.
Professors Guirao, Lee & Knystautas

305-621B. ADVANCED MACHINING PROCESSES.
Professor Kops

305-623A. MACHINE TOOL ENGINEERING.
Professor Cherna

305-624X. APPLIED PROCESS CONTROL.
Professor Zsombor-Murray & Mr. Vroomen

305-625B. SYNTHESIS OF MECHANISMS.
Professor Ahmed

305-626B. ADVANCED CONCEPTS OF ENGINEERING DESIGN.

305-632X. ADVANCED STRESS ANALYSIS FOR ENGINEERS.
Professor Provan or Axelrad

305-633B. TRIBOLOGY.
Dr. Atack

305-640A. GENERAL SYSTEMS THEORY.
Professor Lee

305-641B. DYNAMICS OF COMPLEX SYSTEMS.
Professor Lee

305-642X. MECHANICS OF ENGINEERING SYSTEMS.
Professor Paidoussis

305-643Y. VIBRATIONS IN ENGINEERING SYSTEMS.
Professor Paidoussis

305-644A. NONLINEAR AND DISTRIBUTED PARAMETER CONTROL SYSTEMS.
Professor Hoffman

305-651Y. DESIGN OF HEAT TRANSFER EQUIPMENT.
Professor Stachiewicz

305-652B. DYNAMICS OF COMBUSTION.
Professors Knystautas & Lee

5.7 DEPARTMENT OF MINING AND METALLURGICAL ENGINEERING

Chairman
W.M. Williams, M.Sc. (Bristol), Ph.D. (Tor.), Eng.

Professors
W.G. Davenport, M.A.Sc. (U.B.C.), Ph.D., (Lond.), D.I.C., Eng.
J.J. Jonas, B.Eng. (McG.), Ph.D. (Cantab.)
T. Salman, M.Eng., Ph.D. (McG.), Eng.
W.M. Telford, M.Sc., Ph.D. (McG.)

Associate Professors
J.E. Gruzleski, M.Sc. (Qu.), Ph.D. (Tor.)
R.I.L. Guthrie, B.Sc., Ph.D. (Lond.), D.I.C.
B.W. Mackenzie, B.Eng.(McG.), M.Sc.(Rand.), Sc.D.(Col.)
R.R. MacLachlan, B.Eng. (McG.), M.Sc. (Qu.), Eng.
G.W. Smith, M.Eng., Ph.D. (McG.), Eng.
W.T. Thompson, M.A.Sc., Ph.D. (Tor.)
J.E. Udd, M.Eng., Ph.D. (McG.), Eng.

Assistant Professors
P.A. Distin, B.Sc., Ph.D. (Lond.) D.I.C.
O.T. Djamgouz, M.Eng. (McG.)
J.A. Finch, M.Eng., Ph.D. (McG.)
O.G. Jensen, M.Sc., Ph.D. (U.B.C.)

Lecturers
M. Bilodeau, M.Sc.(McG.), Eng.
M. Firth, M.Eng. (McG.), Eng.
D. Trotter, B.Sc. (Qu.)

Special Lecturers
R.S. Boire, J.P. Drolet, T.E. Hawkins,

The Department of Mining and Metallurgical Engineering offers separate programs leading to the Bachelor of Engineering degree in Mining Engineering or in Metallurgical Engineering. Both curricula have been extensively redefined in recent years to take account of the new technology which has been developed both in the mining and the metallurgical industries. In addition to regular courses and laboratories, the curriculum includes seminars, colloquia, and student projects reinforced by field trips to metallurgical or mining operations throughout Ontario and Quebec. The training provided is designed to make a graduate useful and confident in his abilities by the time that he obtains his degree so that he can assume substantial responsibility soon after graduation.

Graduates in metallurgical engineering find opportunities in the metal producing, metal processing or metal consuming industries and their jobs may involve them in research, development, operations or management. Some make their careers in allied fields (such as ceramics or welding) or take up positions in consulting groups or with government departments.

Graduates in mining engineering are in demand not only in Canada but in other countries, particularly in Africa and Australia, which have large mining industries. Technical developments, e.g. in the operation of open pit mines and in under-ocean mining, have been important and rapid in recent years. These developments, combined with an international concern to preserve a decent environment, offer a genuine challenge to the imaginative student with a strong engineering interest. Students wishing to specialize in geophysical exploration may take appropriate elective courses in geophysics. Graduates specializing in this field may expect to find employment in the mine, oil and gas exploration industry.

The equipment operated by the Department is the best available, most of it being less than five years old. On the metallurgical side: an electron probe microanalyzer, and electron microscope; one of the largest university facilities in North America for melting and casting; computer facilities; x-ray diffraction machines; modern equipment for mechanical testing and deformation studies and a comprehensive range of analytical equipment. In mining: facilities for the testing of rocks under closely controlled conditions of temperature and humidity, a wide range of equipment for studying environmental factors of importance in mining (dust, illumination, ventilation, etc.) , geophysical laboratories, and extensive facilities at Mont. St. Hilaire for mining research.

CURRICULUM FOR THE B.ENG. DEGREE IN METALLURGICAL ENGINEERING

Required Courses		Course Credit	
NON-DEPARTMENTAL SUBJECTS			
180-331A	Inorganic Chemistry of the Solid State	3	
189-261A,B	Linear Algebra and Differential Equations I	3	
189-262A,B	Linear Algebra and Differential Equations II	3	
189-263A,B	Advanced Calculus	3	
189-264A,B	Introduction to Boundary Value Problems	3	
303-205A,B	Mechanics I	4	
304-281A,B	Electric Power	3	
305-346A,B	Heat Transfer	3	
308-208A,B	Computers in Engineering	2	27
METALLURGICAL ENGINEERING SUBJECTS			
306-211A,B	Fundamentals of Metallurgical Engineering	3	
306-212A	Engineering Thermodynamics	3	
306-217A	Instrumental Analysis	3	
306-250B	Extractive Metallurgy I	3	
306-260B	Heat Treatment and Phase Transformations	3	
306-313F	Technical Report I	2	
306-340A	Applied Fluid Dynamics	3	
306-341B	Mineral Separation	3	
306-351B	Electrometallurgy	3	
306-352B	Hydrometallurgy	3	
306-353B	Extractive Metallurgy II	3	
306-361A	Solidification and Casting	3	
306-362B	Strengthening, Deformation and Fracture	3	
306-414F	Technical Report II	3	
306-416B	Metallurgical Design	2	
306-442A	Surface Chemistry of Mineral Separation	3	
306-455A	Process Engineering Metallurgy	3	49

Elective Courses

Six courses, four of which must be selected from courses offered by the Department and one of which must be a Project.

DEPARTMENTAL ELECTIVES			
306-443B	Mineral Separation Project	3	
306-444B	Concentrator Circuit Analysis	3	
306-454A	Metallurgical Thermodynamics	3	
306-456B	Steelmaking Processes	3	
306-457A	Process Metallurgy Project	3	
306-457A	Process Metallurgy Project	3	
306-458A	Corrosion Principles 3		
306-463A	Advanced Physical Metallurgy	3	
306-464B	Physical Metallurgy Project	3	18
GENERAL ELECTIVES			
One course			3
Total			**97**

CURRICULUM FOR THE B.ENG. DEGREE IN MINING ENGINEERING AND APPLIED GEOPHYSICS

Required Courses

		Course Credit	
NON-DEPARTMENTAL SUBJECTS			
186-210B	Mineralogy	3	
186-221A	General Geology	3	
186-232A	Structural Geology	3	
186-440B	Mineral Deposits	3	
189-261A,B	Linear Algebra and Differential Equations I	3	
189-262A,B	Linear Algebra and Differential Equations II	3	
189-263A,B	Advanced Calculus	3	
189-264A,B	Introduction to Boundary Value Problems	3	
303-205A,B	Mechanics I	4	
303-207A,B	Solid Mechanics	4	
304-281A,B	Electric Power	3	
308-208A,B	Computers in Engineering	2	37
MINING ENGINEERING COURSES			
306-201A	Introduction to the Mineral Industry	3	
306-216B	Mining Engineering Techniques	3	
306-230B	Geophysical Exploration	3	
306-321B	Behaviour of Rock Structures	3	
306-325A	Mathematical Applications in the Mineral Industry I	3	
306-326B	Mathematical Applications in the Mineral Industry II	3	
306-327A	Materials Handling	3	
306-328B	Mine Environments	3	
306-340A	Applied Fluid Dynamics	3	
306-341B	Mineral Separation	3	
306-420A	Mining Feasibility Study I	3	
306-421B	Mining Feasibility Study II	3	
306-423A	Mineral Industry Economics I	3	
306-424B	Mineral Industry Economics II	3	
306-429D	Research Project	5	47

Elective Courses

TECHNICAL ELECTIVES

Three courses to be chosen from those offered by the department or from other suitable graduate or undergraduate courses.

DEPARTMENTAL ELECTIVES

306-332A	Mathematical Applications in Geophysics	2	
306-334B	Potential Theory in Geophysics	2	
306-422A	Applied Explosives	3	
306-431A	Advanced Exploration Geophysics I	3	
306-433B	Advanced Exploration Geophysics II	3	
306-435B	Advanced Exploration Geophysics III	3	
306-436A	Advanced Exploration Geophysics IV	3	9

GENERAL ELECTIVES

One or two courses	4
Total	**97**

Courses Offered By The Department

The courses in this department have been renumbered to conform with the following classification system. The first three numbers (i.e. 306) are the department code. The next digit is the level of instruction. The last two digits are classified as follows:

01 to 09	elementary mining courses.
10 to 19	elementary and general metallurgical courses.
20 to 29	general courses.
30 to 29	geophysics courses.
40 to 49	mineral processing courses.
50 to 59	extractive and process metallurgy courses.
60 to 69	physical metallurgy courses.
70 to 79	seminars

306-201A INTRODUCTION TO THE MINERAL INDUSTRY 3(3-3-3). An introduction to the mineral industry in which the basic parameters involved are developed from a mining engineering viewpoint. The Canadian mineral industry, exploration methods, drilling theory and methods, explosives theory and application to underground and surface mining, introduction to fragmentation of materials, introduction to mining environmental control.
Professor Mackenzie & Staff

306-211A FUNDAMENTALS OF METALLURGICAL ENGINEERING 3(3-3-3). Introduction: scope and historical development, metals and the evolution of society, economic and geo-political factors, metals for tomorrow. *Mineral Processing:* minerals of economic importance (metallic and industrial), identification of ore and gangue minerals, ore deposits, exploration, discovery, valuation of mineral deposits, the role and economic analysis of concentration operations. *Extractive Metallurgy:* pyrometallurgy (fuels, ore treatment and furnace processes in the ferrous and non-ferrous industries), hydrometallurgy (leaching, metal recovery and electro-refining), halide metallurgy (chlorination and fused salt electrolysis processes). *Physical Metallurgy:* crystal structure (defects, diffusion and deformation), phase diagrams, phase reactions and alloy systems, examination techniques (preparation, light and electron microscopy, electron microprobe, X-ray diffraction and radiography).
Professor Davenport & Staff

306-212A ENGINEERING THERMODYNAMICS 3(3-1-5). Scope and nature of thermodynamics, classical versus microscopic approach. First Law, mechanical work and heat, applications to elastic deformation of solids, thermochemistry, elementary gaseous expansion processes. Second Law, Carnot cycle for ideal gas, Clausius Inequality, application to simple power and refrigeration cycles. Helmholtz and Gibbs functions, application to simple chemical processes. Third Law and absolute entropy. Phase equilibrium for a pure substance. Chemical equilibrium, applications involving gaseous mixtures or ideal solutions.
Professor Thompson

306-215A,B MATERIALS SCIENCE 3(2-2-5). The economic significance of materials, their properties and limitations, methods of measurement of characteristic properties, importance of physical and mechanical properties in engineering applications, introduction to polymers and plastics, crystalline materials, metals, alloys and phase diagrams, solidification and subsequent thermal treatment of materials, heat treatment of iron-carbon alloys, industrial fabrication techniques such as rolling, extrusion, casting, forging, cold working.
Professors Gruzleski and Williams

306-216B MINING ENGINEERING TECHNIQUES 3(3-3-3). (Prerequisite: 306-201A.) A study of mining engineering techniques and their application to the development of extractive methods for the exploitation of mineral deposits. Principles of surface and underground mining methods, ground stress and support approaches, use of pillars and fill systems, unit type local support, stoping and development methods, notes on mine surveying, slope stability, waste disposal.
Professor MacLachlan

306-217A INSTRUMENTAL ANALYSIS 3(2-3-4). (Prerequisite: 180-331A**.) Methods of sample preparation, UV and visible spectrophotometry, infra-red spectrophotometry, flame and atomic absorption spectrophotometry, emission spectroscopy, electro-deposition and coulometry, polarography, potentiometric titrations, gas chromatography, Leco train analysis, X-ray diffraction and fluorescence spectroscopy, radiotracer techniques.
Professor Finch

306-230B GEOPHYSICAL EXPLORATION 3(2-2-5). (Co-requisites: 189-261A,B, 189-263A,B or equivalents.) Applications of seismic, gravity, magnetic, electrical and radioactive methods in petroleum and mineral exploration.
Professor Jensen

306-250B EXTRACTIVE METALLURGY I 3(2-3-4). (Prerequisites: 306-211A, 308-208A,B.) An examination of some of the operations and processes of extractive metallurgy and the need for control through the application of chemical and thermodynamic principles; stoichiometry and materials balances — ores, gangue minerals, fluxes and slags; enthalpy and heat balances — fuels, flame temperatures, operating temperatures, heat losses, refractories; free energy and process equilibria — process variables and their interactions, optimum conditions.
Professor Smith

306-260B HEAT TREATMENT AND PHASE TRANSFORMATIONS 3(2-3-4). (Prerequisite: 306-211A*.) Precipitation, eutectoid reactions,

austenite-martensite reaction, bainite formation, recovery, recrystallization, grain growth, secondary recrystallization. Industrial heat treatment of ferrous and non-ferrous metals based on these transformations.
Professor Williams

306-313F TECHNICAL REPORT I 2(0-0-6). A technical paper prepared in accordance with instructions from the Department.
Mr. Firth

306-321B BEHAVIOUR OF ROCK STRUCTURES 3(3-3-3). (Prerequisites: 303-207A,B, 306-216B, Co-requisite: 186-232A.) Summary of the contributions made by various disciplines to the field of rock mechanics, the state of present knowledge, application of basic principles to problems involving the design of competent structures in rock masses.
Professor Udd

306-325A MATHEMATICAL APPLICATIONS IN THE MINERAL INDUSTRY I 3(3-0-6). (Prerequisites: 189-261A,B, 189-263A,B, 308-208A,B. Co-requisites: 189-262A,B 189-264A,B.) The application of probability theory and statistics to decision problems in the mineral industry. Treatment of data using statistical analysis and probability theory, ore reserve estimation and grade control, statistical decision theory applied to exploration strategy, mineral occurrence models, mineral market forecasting techniques.
Mr. Bilodeau

306-326B MATHEMATICAL APPLICATIONS IN THE MINERAL INDUSTRY II 3(3-0-6). (Prerequisite: 306-325A.) The application of management science techniques to decision problems in the mineral industry. Economic evaluation techniques, the mine development decision, Monte Carlo methods for the simulation of uncertainty, allocation theory, dynamic modelling and simulation of milling circuits, planning and scheduling techniques.
Mr. Bilodeau

306-327A MATERIALS HANDLING 3(3-3-3). (Prerequisite: 306-216B.) A study of the factors involved in the selection of methods for handling ores, raw materials, and other resources. Materials handling systems for underground and open cut mines, transportation of materials, comparative studies of alternative systems for selected cases, capital and operating costs of equipment. Candidates will prepare and present a colloquium on a selected topic.
Mr. Trotter

306-328B MINE ENVIRONMENTS 3(3-2-4). (Prerequisites: 306-201A, 306-340A.) The major elements of the course involve the characteristics of air contaminants, pathogenesis of pneumoconiosis, problems of noise and vibrations, principles of illumination and underground lighting, mine ventilation systems, and design features of dust control and make-up air supply systems. Candidates will prepare a technical paper on a selected topic.
Professor Djamgouz

- **306-332A MATHEMATICAL APPLICATIONS IN GEOPHYSICS 3(2-3-4).** (Prerequisites: 306-230B, 189-262A,B, 189-264A,B or equivalents.) Applications of mathematical methods in geo-physics. Vector calculus, elementary tensors, Fourier analysis, differential equations of geo-physics, numerical methods.
Professor Jensen

- **306-334B POTENTIAL THEORY IN GEOPHYSICS 2(2-0-4).** (Prerequisite: 306-332A and/or consultation with instructor.) Applications of potential theory in gravity, magnetostatics, electrostatics, solution of Laplace's and Poisson's equations, the earth's gravity and magnetic fields.
Professor Jensen

306-340A APPLIED FLUID DYNAMICS 3(2-1-6). (Prerequisite: 303-205A,B**.) Total energy balance, mechanical energy balance, viscosity, friction, Newtonian and non-Newtonian flow. Pipes, valves and fittings, compressible flow, draft. Flow through stacks and ventilation ducting, compressors, fans and blowers. Measurement of flow and pressure. Flow of solids through fluids, slurry transport (settling and non-settling), classification, thickening, filtering, fluidization, cyclones.
Professor Smith

306-341B MINERAL SEPARATION 3(2-3-4). (Prerequisites: 306-201A or 306-211A.) General discussion of minerals and ores. Size reduction and liberation. Screening and particle size determination. Handling of solids and pulps. Fundamentals of mineral concentration. Gravity, chemical, electrical, magnetic, and electrostatic separations. Introduction to cyanidation and flotation.
Professor Finch

306-351B ELECTROMETALLURGY 3(2-3-4). (Prerequisite: 306-212A.) Coulometry. Conductance and transference in electrolytes. Thermodynamics of electrolyte solutions. Electrochemistry of reversible cells, electrode potentials. Pourbaix diagrams: application to corrosion, leaching and electrodeposition. Irreversible electrode processes: application to corrosion and electrodeposition.
Professor Thompson

306-352B HYDROMETALLURGY 3(2-3-4). (Prerequisite: 306-211A.) Unit processes in hydrometallurgy: acid, alkaline and pressure leaching methods. Thermodynamic and kinetic aspects. Purification of leach liquors by ion exchange, solvent extraction and selective precipitation operations. Solid-liquid separation techniques. Recovery of metal values by cementation, electrowinning, and hydrogen precipitation methods. Contemporary plant design incorporating the above principles.
Professor Distin

306-353B EXTRACTIVE METALLURGY II 3(2-3-4). (Prerequisite: 306-250B.) Equilibrium phase diagrams, phase separation. Non-equilibrium solidification, zone refining. Thermodynamics of metal reduction, roasting, refining processes, reaction efficiencies. Physical and chemical aspects of oxide slags and refractories. Analysis of developments in the production of lead, zinc, copper, and nickel. Metallurgy of the less common metals.
Professor Guthrie

306-361A SOLIDIFICATION AND CASTING 3(2-3-4). (Prerequisite: 306-211A*.) Nucleation and grain refinement, freezing of pure metals, solute redistribution during solidification, constitutional undercooling, dendritic freezing, segregation phenomena, the freezing of gray, white, and nodular cast iron, malleable iron, industrial casting techniques, ingot structures.
Professor Gruzleski

306-362B STRENGTHENING, DEFORMATION AND FRACTURE 3(2-3-4). (Prerequisite: 306-211A*.) Strengthening of metals by: work hardening, grain size refinement, sub-structure strengthening, solute, precipitate, dispersion, order and martensitic hardening. Practical implications. Service failure and prevention, mechanisms of brittle and ductile fracture, creep and fatigue. Industrial shaping and forming, theories and processes.
Professor Jonas

306-414F TECHNICAL REPORT II 3(0-0-9). (Prerequisite: 306-313F.) A technical paper prepared in accordance with instructions from the Department, together with oral presentation.
Mr. Firth

306-416B METALLURGICAL DESIGN 2(2-0-4). (Prerequisite: Satisfactory completion of the required courses in the relevant areas of the Metallurgical Engineering program. Departmental approval is necessary.) Design of new metallurgical plants, processes and products based on knowledge acquired in previous core courses. Material and heat balances, metal economics, design and optimization.
Professor Smith

306-420A MINING FEASIBILITY STUDY I 3(0-3-6). (Prerequisites: 186-232A, 306-341A, 306-327A, 306-326B, 306-328B.) The course is a case study exercise in application of the specialist skills developed in the mining engineering program. The purpose of the course is to combine these skills in carrying out an appraisal of the technical feasibility and economic attractiveness of developing a mineral deposit, based on the results of an exploration program, and to select the most attractive alternative. Staff members are available for individual consultations and for the presentation of seminars as required. Students are required to present seminars on aspects of the case study analysis. Final individual reports are to be prepared to professional standards. Individual interpretations are encouraged.
Professor Djamgouz and Staff

306-421B MINING FEASIBILITY STUDY II 3(0-3-6). (Prerequisite: 306-420A.) Based on the results of 306-420A, students are required to complete the preliminary design and feasibility study of the mining system. Staff members are available for individual consultations and for the presentation of seminars as required. Students are required to present seminars on aspects of the case study analysis. Final individual reports are to be prepared to professional standards. Individual interests are encouraged and wide latitude of content is permitted in the preparation of the reports.
Professor Djamgouz and Staff

306-422A APPLIED EXPLOSIVES 3(2-3-4). The course is designed to introduce the engineering aspects of explosives relevant to their use in rock and ground excavation. The concepts of fuel-oxidizer mixes and the principles of various formulations such as dynamite slurries and dry mixes are reviewed. The concept of detonation and the physical factors related to detonation that govern the performance of many commercial explosive formulations are discussed. Initiation systems, blast damage and vibration control, blasting frozen ground, tunnelling and other topics are included. Basic concepts in drilling and blast patterns are presented. Legislation regarding explosives transport, handling, and storage is reviewed. The course is reinforced by special field trips to selected laboratories and work sites.
Professor MacLachlan

306-423A MINERAL INDUSTRY ECONOMICS I 3(3-0-6). (Prerequisite: 306-201A.) Incorporation procedures, company direction and directorships, cost accounting and controls, company law, financial statements, federal taxation.
Mr. Boire

306-424B MINERAL INDUSTRY ECONOMICS II 3(3-0-6). (Prerequisite: 306-423A.) Applications of economic analysis for corporate planning and the structuring of mineral policy in government organizations. The mineral conversion process, the mine in economic theory, Canadian mineral policy, case studies in mining company organization and planning.
Professor Mackenzie & Mr. Drolet

306-429D RESEARCH PROJECT 5(0-2-13). (Prerequisites: 306-327A, 306-328B, and others depending on the topic chosen.) To develop an understanding of independent study and research methods including problem definition, selection of approach, problem of solution and communication of results. Research topics, which may be principally experimental, theoretical or involve a critical review of the literature, will be chosen in consulta-

tion with individual staff members who will act in a supervisory capacity throughout the project.
Professor Mackenzie & Staff

- **306-431A ADVANCED EXPLORATION GEOPHYSICS I 3(2-3-4).** (Prerequisite: 306-230B.) Applications of gravity and magnetic methods in petroleum and mineral exploration with particular emphasis on instruments, field methods, and interpretation of results.
Professor Telford

- **306-433B ADVANCED EXPLORATION GEOPHYSICS II 3(2-3-4).** (Prerequisite: 306-431A and consultation with instructor.) Applications of electrical methods in petroleum and mineral exploration with particular emphasis on instruments, field operations and interpretation of results.
Professor Telford

- **306-435A ADVANCED EXPLORATION GEOPHYSICS III — SEISMOLOGY 3(2-3-4).** (Prerequisites: 306-332A or equivalents and consultation with instructor.) Seismic theory. Seismic methods in exploration: instrumentation, field techniques, data processing and interpretation.
Professor Jensen

- **306-436B ADVANCED EXPLORATION GEOPHYSICS IV 3(2-3-4).** (Prerequisite: 306-230B and consultation with instructor.) Seismic methods in mineral exploration and engineering geophysics. Radioactivity method, instrumentation and interpretation of results. Well logging techniques with particular emphasis on instrumentation, interpretation of petroleum well logs, applications in mineral exploration areas.
Professor Telford

306-442A SURFACE CHEMISTRY OF MINERAL SEPARATION 3(2-3-4). (Prerequisite: 306-341B.) Chemical and physical thermodynamic factors underlying surface and interfacial phenomena. Fundamentals of flotation operations. Adsorption mechanisms in relation to floatability. Collection, activation, depression of metallic and non-metallic minerals. Quantification of concentration operations. Principles of automation.
Professor Salman

- **306-443B MINERAL SEPARATION PROJECT 3(0-6-3).** (Prerequisites: 306-340A, 306-442A.) Ore samples will be given to groups of students to study possible methods of concentration. Open circuit feasibility tests and locked (or cycle) tests will be conducted to evaluate batch and continuous circuits. Economic feasibility of the ore deposit will have to be established and completed with a concentrator design.
Professor Salman & Staff

- **306-444B CONCENTRATOR CIRCUIT ANALYSIS 3(2-3-4).** (Prerequisite: 306-442A.) Preliminary mill design, flowsheet evaluation and concentration circuit analysis. Pulp density relationships, flow of pulp, flow of solids and liquids through a circuit. Design of unit operations in series and in parallel. Circuit controls. Tailings disposal in relation to pollution and environmental control.
Professor Salman

- **306-454A METALLURGICAL THERMODYNAMICS 3(2-3-4).** (Prerequisite: 306-212A.) Binary metallic solution: relationships between partial molar properties, limiting laws, regular solutions and microscopic interpretation of partial molar quantities. Heterogeneous equilibria in binary systems and activity data approximations from phase diagrams. Ternary phase diagrams in systems where only one phase has variable composition. Dilute ternary and multi-component systems, interaction parameters. Concentrated ternary solutions, graphical Gibbs-Duhem integrations.
Professor Thompson

306-455A PROCESS ENGINEERING METALLURGY 3(3-1-5). (Prerequisites: 305-346A*, 306-212A.) Analysis of processes involved in the winning, refining and treatment of metals with special emphasis on transport phenomena. Fick's Laws, interfacial equilibria, single and multicomponent mass transfer operations. Convective systems. Topochemical reactions. Dimensional analysis, pilot plants and modelling. Characteristics of linear and well-mixed reactors, tracer techniques.
Professor Guthrie

- **306-456B STEELMAKING PROCESSES 3(2-2-5).** (Prerequisites: 306-353B*, 306-455A*.) Physicochemical, kinetic and economic aspects of the following: iron-making in blast furnaces, sintering operations, coke-making and steelmaking in electric, basic oxygen and open-hearth furnaces. Survey of associated pollution emissions and current abatement methods.
Professor Davenport

- **306-457A PROCESS METALLURGY PROJECT 3(0-6-3).** (Prerequisites: 306-351B, 306-352B, 306-353B. Co-requisite: 306-455A.) A wide variety of experimental projects in process metallurgy, covering the fields of hydro-, electro-, pyro-, and chemical metallurgy will be suggested by staff (or students) for detailed investigation and evaluation.
Professor Distin & Staff

- **306-458A CORROSION PRINCIPLES 3(2-3-4).** Review of principles of metal oxidation in aqueous and non-aqueous environments with special reference to corrosion. Structure, properties, kinetics and growth mechanisms of oxide films, stress corrosion, corrosion fatigue, hydrogen embrittlement, carbide precipitation, cavitation, anodic and cathodic protection, protective coatings. Use of non-metallic materials. Corrosion in industrial processes, soils, and marine environments. Corrosion testing methods. Corrosion as a factor in design and selection of materials.
Professor Distin.

- **306-463A ADVANCED PHYSICAL METALLURGY 3(2-2-5).** (Prerequisites: 306-260B, 306-361A, 306-362B.) A lecture and discussion course dealing with the physical metallurgy, properties and applications of the less common metallic materials, e.g.: stainless steels, superalloys, refractory metals, high strength low alloy steels.
Mr. Firth and staff

- **306-464B PHYSICAL METALLURGY PROJECT 3(0-6-3).** (Prerequisites: 306-260B, 306-361A, 306-362B.) An experimental or theoretical project, based partly on the student's interests, on some topic in physical metallurgy, e.g. in solidification, deformation, heat treatment, alloying, instrumentation, powder metallurgy, joining processes.
Mr. Firth and staff

5.8 SCHOOL OF COMPUTER SCIENCE

Director
G. Marsaglia, B.Sc.(Colo. State), Ph.D.(Ohio State)

Professors
W.D. Thorpe, M.A.(Cantab.)

Associate Professors
T.H. Merrett, B.Sc. (Qu.), D.Phil. (Oxon.)
M.M. Newborn, B.E.E. (Renss.), Ph.D. (Ohio State)
C.C. Paige, B.Sc. (Sydney), Ph.D.(Lond.)
G.F.G. Ratzer, B.Sc. (Glas.), M.Sc. (McG.)
A.M. Valenti, B.Sc. (Tor.), M.Eng. (McG.)

Assistant Professors
K. Ananthanarayanan, B.A., Ph.D. (Madras)
D.J. Burrage, B.A. (Cantab.), M.Sc. (Brun.)
N. Marovac, M.Eng. (Belgrade), Ph.D. (Lond.)
R.A. Reckhow, B.Sc. (Mich.), Ph.D. (Tor.)
G.T. Toussaint, B.Sc. (Tulsa), Ph.D. (U.B.C.)

Lecturers
A. Greenberg

Computer science is less than 30 years old, and in this short time has become a field of broad practical and theoretical importance. The creators of electronic calculating machines during the last world war solved many scientific computational problems, and rapid growth of computational numerical analysis followed. Mathematical techniques found applications beyond scientific and engineering problems, creating the new field of operations research. Computers began to be put to uses of such complexity that describing the problems became more difficult than the computations themselves. Instructing the computer became the specialized discipline of programming. Programmers needed languages to communicate with the machine and operating systems to control it, and the field of software was born The discovery of non-numerical uses of computers led to fields as diverse as large scale data processing, information retrieval and artificial intelligence. On the theoretical side, the problems and applications of computers have created areas of study in the theory of formal languages, the theory of automata and the theory of computation.

Most of the areas of computer science require study at the postgraduate level, and this is the major emphasis of the School of Computer Science. Some of the postgraduate courses are open to suitably qualified senior undergraduates (see the *Announcement of The Faculty of Graduate Studies and Research,* Section 'E'). At the undergraduate level, a variety of courses is offered, concentrating on the development of programming skills, but including introductions to software, computer systems and numerical analysis.

Courses Offered By The School

N.B. All of the following courses are introductory and not more than one of them may be taken for credit:

308-107	Restricted to Architecture students
308-208	Restricted to Engineering students
308-100	Restricted to Arts students
308-200	Primarily for students of Mathematics, Physics, Chemistry
308-220	Primarily for students of Biology, Psychology and Social Sciences.

Note that continuation to other computer science courses is possible only from 308-208 or 308-200.

308-100A,B INTRODUCTION TO COMPUTING 3(1-2-6). An introduction to applications and general concepts of computing; introduction to programming using a selection of features of the programming language FORTRAN. This course is not available to Engineering students.
Staff

308-107A,B COMPUTERS AND ARCHITECTURE 2(1-2-3). A beginning course in computing designed to introduce general concepts in computing as well as a basic working knowledge of the programming language FORTRAN. Credit only for students in the School of Architecture. The course consists of 15 modules, containing videotape lectures, module booklets, interactive terminal sessions and assignments to be run on the computer.
Professor Toussaint

308-200A,B INTRODUCTION TO COMPUTER SCIENCE 3(2-0-7). (Prerequisite: 189-121 or equivalent.) Number systems; data representation; algorithm design; FORTRAN; computer methods including searching, sorting, solution of equations, numerical integration and matrix manipulation. This course is not normally available to Engineering students, who must take either 308-208 or 304-221A, depending on their departmental requirements.
Staff

308-208A,B COMPUTERS IN ENGINEERING 2(2-1-5). (Prerequisites: Differential and integral calculus. Co-requisite: linear algebra: determinants, vectors, matrix operations.) An introduction to computing and discussion of computing methods for engineering problems. Machine language; FORTRAN; numerical methods (roots of equations, quadrature, simultaneous linear equations, differential equations); use of library subroutines.
Professor Merrett

308-210A,B COMPUTER STRUCTURE AND ASSEMBLY LANGUAGE PROGRAMMING 3(2-0-7). (Prerequisite: 308-208 or 308-200.) Computer structure, machine language, instruction execution, addressing techniques, and digital representation of data. Symbolic coding and assembly

systems, macro definition, program segmentation and linkage.
Professor Ratzer

308-220A,B DIGITAL COMPUTING FOR STATISTICAL ANALYSIS 3(3-0-6). (Prerequisite: 166-350A, 189-231A, or 204-204A.) The course introduces the student to computers and to their uses in the solution of statistical problems. Number systems, data representation, characteristics of a high-level programming language (FORTRAN). Methods of computer solution of statistical problems, random numbers, games of chance, simulation.
Professor Marsaglia

308-230A,B COMPUTERS IN DATA PROCESSING 3(2-0-7). (Prerequisite: 308-200 or equivalent programming experience.) Uses of computers for data processing, COBOL; job control language; system utility programs including sort/merge; file processing; comparison of languages in business-oriented applications.
Professor Burrage

308-300A,B PROGRAMMING LANGUAGES 3(2-0-7). (Prerequisite: 308-210 or 304-221A.) A study of scientific programming languages including PL/1, APL and GPSS. Introduction to theory of compilers and interpreters. Computer solution of non-numerical problems.
Professor Thorpe

308-305A COMPUTER SYSTEM ARCHITECTURE 3(3-0-6). (Prerequisite: 308-210.) A functional description of computer hardware. Hardware concepts and current technology. Memories, buffers, memory hierarchies and dynamic address translation. CPU characteristics, performance factors, overlap, parallel and pipeline systems. Microprogramming. Interrupt mechanism and clocks. Channels, control units, input devices including telecommunication equipment.
Mr. Greenberg

308-310B COMPUTER SYSTEMS AND ORGANIZATION 3(2-0-7). (Prerequisite: 308-305.) Control and scheduling of large information processing systems. Operating system software — resource allocation, dispatching, processors, access methods, job control languages, main storage management. Batch processing, multiprogramming, multiprocessing, time sharing.
Professor Valenti

308-315A INFORMATION STRUCTURES 3(2-1-6). (Prerequisite: 308-210 or 304-221, (Students with a high grade in 308-200 or 308-208 may be permitted.)) This course introduces the concepts of data storage and develops competence in data manipulation. The student is expected to write and run his own programs, mainly in FORTRAN. The course discusses the basic types of data structures, their theoretical properties and some of their applications. Contents: storage of arrays, applications to special matrices and scientific computation; queues and stacks, applications to compiler writing; sorting and searching; introduction to list processing and symbolic manipulation.
Professor Merrett

308-320B FILES AND DATA BASES 3(2-0-7). (Prerequisites: 308-230A and 308-315A.) PL/1 language essentials; data sets, files and JCL; sequential files; printing, sorting, updating, indexed sequential files; direct files; files of structured data; data bases.
Professor Ananthanaraganan

308-350A,B NUMERICAL ANALYSIS 3(3-1-5). (Prerequisites: 189-262A,B or 189-267A,B, 308-208A,B or 308-200A,B.) Solution techniques for linear, simultaneous, algebraic equations; iterative methods for the solution of nonlinear equations, interpolation and curve fitting, numerical integration by interpolative and quadrature methods, numerical integration of systems of differential equations, including initial value and boundary-value problems, relationship of differential equations to the eigenvalue problem, the matrix eigenvalue problem and its solutions.
Professor Bach (Mechanical Engineering), Professor Burrage

308-415B PROGRAMMING LANGUAGE STRUCTURE AND COMPILERS 3(3-0-6). (Prerequisites: 308-210A,B and 308-315A.) An introduction to the structure of programming languages and techniques of compilation. A study of various programming languages and their structures from the point of view of implementation. An introduction to compilers and compiler writing. The student is expected to acquaint himself with the languages discussed and with compilation techniques by writing and running programs and compiler segments.
Staff

308-425B HEURISTIC PROGRAMMING 3(3-0-6). (Prerequisite: 308-315). This course introduces heuristic as opposed to algorithmic concepts in problem solving, pattern recognition, learning and adaptation. The student is expected to write and run programs in the above areas. CONTENTS: Game trees; programs that play games; heuristic search procedures; programs that solve problems; learning programs; adaptive programs; question answering programs; pattern recognizing programs.
Professor Toussaint

308-520A DATABASE SYSTEMS 3(3-0-6). (Prerequisite: premission of instructor. Recommended: 189-318, 308-320.) An introduction to abstract data structure and to techniques of database implementation. Topics: review of sentential and predicate logic, relational view of data, relational calculus, relational algebra, normalization; hierarchical and network views of

data, implementation techniques, existing data-base systems (chosen from: ADABAS, DBTG, IMS, S2000, TOTAL); data security and integrity.

308-573B MINI-COMPUTERS. Characteristics of mini-computers. Their internal structure. Assembler and machine language programming with emphasis on PDP 11. Assemblers, loaders and simulators for several machines. Manufacturers' supplied software including operating system. Mini-computer applications. Students will be assigned "hands-on" projects.

308-610A INFORMATION STRUCTURES

308-611B DATA STRUCTURE AND LIST PROCESSING TECHNIQUES

308-614A COMPUTER METHODS IN SYSTEMS ANALYSIS I

308-615B COMPUTER METHODS IN SYSTEMS ANALYSIS II

308-620A PROGRAMMING LANGUAGES AND COMPILERS

308-621B THEORETICAL ASPECTS OF COMPILER CONSTRUCTION

308-624A HIGH-LEVEL COMPUTER LANGUAGES I

308-625B HIGH-LEVEL COMPUTER LANGUAGES II

308-630A FORMAL LANGUAGES

308-631B THEORY OF ALGORITHMS AND COMPUTATIONAL COMPLEXITY

308-640A NUMERICAL ALGORITHMS I

308-641B NUMERICAL ALGORITHMS II

308-644A PATTERN RECOGNITION I

308-645B PATTERN RECOGNITION II

308-660A COMPUTER METHODS IN OPTIMIZATION I

308-661B COMPUTER METHODS IN OPTIMIZATION II

308-666A COMPUTER METHODS IN OPERATIONS RESEARCH I

308-667B COMPUTER METHODS IN OPERATIONS RESEARCH II

308-671B COMPUTER SYSTEMS AND ORGANIZATION

308-690A COMPUTER METHODS IN PROBABILITY AND STATISTICS I

308-691B COMPUTER METHODS IN PROBABILITY AND STATISTICS

308-698A MONTE CARLO AND SIMULATION I

308-699B MONTE CARLO AND SIMULATION II

308-760A ADVANCED TOPICS: THEORY

308-761B ADVANCED TOPICS: THEORY

308-762A ADVANCED TOPICS: PROGRAMMING

308-763A ADVANCED TOPICS: PROGRAMMING

308-764A ADVANCED TOPICS: SYSTEMS

308-765B ADVANCED TOPICS: SYSTEMS

308-766A ADVANCED TOPICS: APPLICATIONS

308-767B ADVANCED TOPICS: APPLICATIONS

6 CHOICE OF ELECTIVES AND SUB-PROGRAMS

Students of the Faculty have a considerable choice of electives divided into the categories of general and technical. The choice while wide is limited by timetable considerations and by departmental regulations although the Faculty tries to arrange its timetable to provide maximum choice. The departments publish, in this *Announcement* and in separate documents, information regarding the choice of courses. Students should also consult their course advisers. Some general information applicable to all students of the Faculty is given below. This mainly covers the area of management, a topic of considerable importance to engineers, but also gives information on environmentally oriented courses and materials science.

COURSES IN MANAGEMENT FOR ENGINEERING STUDENTS

Many engineers begin to assume management functions within a few years of graduation. They can at this stage take up the study of economics, behavioural science and other management subjects. For students wishing to include studies in their undergraduate program, the University provides through our own Faculty and the Faculty of Management, a variety of suitable courses.

Two Faculty of Engineering courses are available. Engineering Economy, 300-310, is designed for U2 and U3 students and is not recommended for U1 students. It introduces the concept of costs into the evaluation of engineering projects and architectural proposals. Economic Environment, 300-211, provides a course in general economics.

Seven courses are available, subject to timetable requirements, from the core program of the Faculty of Management. They are:

280-211A,B	Accounting I
280-222A,B	Intro. to Organization Behaviour
280-323A,B	Organization Theory
280-341A,B	Finance I
280-352A,B	Marketing Management
280-373A,B	Operations Research
280-393A,B	Managerial Economics

Other courses from the core have considerable overlap with our own courses and thus are not available to our students.

Students interested in an overview of management should take one or both of 300-211, 300-310.

Five of the above list of Faculty of Management courses form an integrated sub-program in Management. Successful completion of this subprogram (a grade of C or better in all courses) is noted on a student's transcript. Prerequisite to entry to this sub-program is satisfactory performance in a collegial course in general economics (e.g. 383-915-71 or 383-920-71), McGill course 154-200, or the Faculty course 300-211.

An Engineering course deemed equivalent by the Faculty of Management may be substituted for course 280-373, Operations Research.

The content of the sub-program, 15 credits, exceeds the general elective allowance in Engineering, currently between 6 and 13 credits depending on the department. A department may be willing to accept one or more courses as technical electives but a student embarking on the sub-program must be prepared to take credits additional to the normal engineering program. Students considering this sub-program should consult their adviser.

ENVIRONMENTAL STUDIES

The term "Environmental Studies" usually denotes all studies concerned with the relationship of man to his natural and man-made environment. Thus the term is used to categorize courses and groups of courses concerned with topics as narrow as the technology of pollution-control or as broad as land-use planning; it also encompasses such diverse subjects as mathematical modelling of socio-economic systems as these affect the quality of human life as well as religious values governing the attitude of man towards nature. Because "Environmental Studies" is, by definition, man-centred, it often excludes courses and degree programs that deal with components of the human environment but that do not consider the human impact on degradation or perception of these components, be they the earth's atmosphere, forests, or waters. It also excludes ecological studies of plants and animals in natural settings unaffected by man. Environmental or ecological studies that are not focused on man and his impact have often been referred to as "Environmental Sciences". In this Announcement description, however, the distinction between "Environmental Studies" and "Environmental Sciences" has been overlooked in order to give students as complete a perspective as possible on the University's offerings in the broad area of teaching and research known as the "environment".

McGill University does not have a degree program in Environmental Studies per se because the subject is too broad to be covered adequately by any one undergraduate curriculum. An Environmental Studies "minor" has also not proved feasible because it would have meant even greater dilution of the subject, particularly if only one "minor" were available for Arts, Science, and Engineering students. The University has, however, many conventional degree programs that are eminently "environmental" in scope and orientation, although they may deal with only one segment of the total area of environmental concern. The University offers, in addition, a number of courses, given by different departments, that stress the comprehensive nature of environmental problems, and hence the need to synthesize humanistic, institutional and

scientific knowledge in order to understand these problems. These courses, which have few prerequisites, are available as electives to students in any degree program, and serve to place the student's field of specialization in the overall context of the environmental dilemma. Thus by choosing one of the "environmental" degree programs and by judicious selection of electives, a McGill student should be able to meet the basic requirements of a sound "environmental" education to:

a) acquire the skills and intellectual discipline of an established field that deals with one environmental component or one aspect of man's relation to his environment; in order to be effective and employable after graduation, a student needs, in any case, to concentrate his efforts in one particular direction;
b) be able to see the relevance of one's own field of specialization to the overall environmental concern; at the same time, be able to understand complex cause-and-effect relationships that transcend traditional disciplines, and to think automatically of the consequences of altering the physical-human environment;
c) be able to communicate with specialists in related disciplines;
d) be aware of the basic institutional mechanisms for dealing with environmental problems (government, law, etc);
e) be aware that environmental problems, as well as the solution to these problems, ultimately stem from personal and societal values and attitudes.

The University's Committee on Environmental Studies has assembled a number of courses which have few prerequisites so as to be available to a wide cross-section of students. Among them are two Engineering courses, Environmental Aspects of Technology, 300-230, and Models of Socio-Technical Systems, 302-370. The leaflet produced by the Committee of Environmental Studies should be consulted for details.

POLLUTION CONTROL

The Faculty of Engineering offers an "area of concentration" in Pollution Control, which consists of about 15 engineering and non-engineering courses devoted to the technology of pollution control and broader topics related to pollution control. This "area of concentration" may be developed into a pollution-control "Minor" once sufficient courses specificially devoted to this subject are available.

While a basic engineering education is essential to professional work of this kind, students who are interested in orienting their program towards pollution control should note the following courses which are of direct relevance. These courses are divided into three groups; introductory, intermediate and advanced, which are respectively, in general, suitable for students in their first, second and third years. Since these courses are drawn from a wide spectrum of the Faculty, a student interested in pollution control may not have the stated prerequisite. In this case he should consult the professor in charge of the course regarding his suitability.

Introductory

300-230	The Environmental Aspects of Technology
302-370	Models of Socio-Technical Systems
303-310	Sanitary Engineering

Intermediate

302-471	Industrial Water Pollution Control
302-472	Industrial Air Pollution Control
303-430	Municipal Systems
303-431	Stream Pollution Control

Advanced

305-447	Combustion
306-328	Mine Environments

Non-engineering courses

154-425	Economics of Ecology
177-305	Environmental Biology
177-432	Limnology
180-307	Analytical Chemistry of Pollutants
495-471	Environment and the Law

A student wishing an overview of pollution control at a non-specialist level should take 300-230 and/or 302-370.

A student wishing to develop professional competence in the area should take either the sequence 302-471 and 472 or 303-310, 430 and 431. While there is significant overlap between the two sequences the viewpoints are different. The 302 series is considered from the point of view of the chemical engineer and the 303 series is considered from the point of view of the civil engineer. To these courses could well be added any of 305-447, 306-328 and 180-307. 305-447 is a guide to the processes which cause air pollution. 306-328, while having a specialized title, is valuable for all interested in hazardous atmospheres. 180-307 is a guide to the requirements and techniques of instrumentation. The other courses listed give insights into various aspects of pollution control which are covered by departments outside the Faculty.

Students wishing further advice should consult their adviser.

COMPUTER SCIENCE

McGill does not offer a first degree in Computer Science but offers an extensive range of courses for Engineering students interested in computers. The basic courses, given by the School of Computer Science, are:

308-107A,B	Computers in Architecture
308-208A,B	Computers in Engineering
308-210A,B	Computer Structure and Assembly Language Programming
308-315A	Information Structures
308-350A,B	Numerical Analysis

Additional courses with significant Computer Science and Computer Engineering content are:

302-356A	Computer Methods in Chemical Engineering
302-455B	Process Control
303-208B	Deterministic Systems
303-445A	Construction Project Management
304-221A,B	Introduction to Computers
304-322A,B	Digital Systems Design
304-424A	Small Computer Systems
304-425B	Computer Organization and Architecture
304-512B	Digital Signal Processing
304-521B	Digital Communications
304-529A	Image Processing and Communications
304-531B	Real-Time Systems
304-532A	Computer Graphics
304-533B	Text Processing
304-543B	Numerical Methods in Electromagnetics
305-291A	Graphics
305-474B	Selected Topics in Operations Research
305-475B	Numerical Control of Machine Tools
308-300A,B	Programming Languages
308-305A	Computer Systems Architecture
308-310B	Computer Software Organization and Design
308-320B	Files and Data Bases
308-415A	Programming Language Structure and Compilers
308-425B	Heuristic Programming

As the course numbers indicate, these courses are offered in a variety of departments at a variety of levels. Some will be required courses in the student's ordinary program; some will be courses in other departments which can be taken as technical electives. The student should consult with his adviser about the possibility and advisability of taking specific courses.

The following categories are a guideline to the content of the courses:

Programming and Programming Languages
304-221, 304-424, 305-291, 308-107, 308-108, 308-210, 308-300

Software Design
304-425, 304-529, 304-532, 304-533, 308-305, 308-310, 308-315, 308-320, 308-415, 308-425.

Hardware Design
304-322, 304-425, 304-512, 304-521, 304-532

Real-Time Processes
302-455, 304-475, 304-541.

Operations Research
302-356, 303-208, 303-445, 305-474

Numerical Analysis
302-356, 304-543, 308-350

MATERIALS SCIENCE

Materials such as structural steel and reinforced concrete, high-alloy heat-resistant steels, composites such as fibreglass, polymers such as polyethylene and highly refined exotic materials such as germanium and silicon are of vital importance to engineers. A survey of the properties and characteristics of a wide range of such materials is provided by the elective, Materials Science 306-215A,B, offered by the Department of Mining and Metallurgical Engineering. The course 303-201A, Structural Materials, offered by the Department of Civil Engineering, treats similar material from a somewhat different viewpoint. Both courses are especially suitable for students in their first year. More advanced and specialized courses are provided by the departments and students should consult their departmental advisers regarding their choice.

6.1 OUTSIDE DEPARTMENTS OFFERING COURSES FOR THE ENGINEERING CURRICULA

DEPARTMENT OF CHEMISTRY

Chairman
L.E. St.Pierre

Courses Offered By The Department

180-212A,B INTRODUCTORY ORGANIC CHEMISTRY I 4(3-3-6). (Prerequisites: 180-110A and 180-120B, or equivalent courses.) A survey of reactions to aliphatic and aromatic compounds including modern concepts of bonding, mechanisms, conformational analysis and spectra.
Professors Farrel & Ogilvie and Mrs. Heyge

180-213A,B INTRODUCTORY PHYSICAL CHEMISTRY I 3(3-0-6). (Prerequisites: 180-120B or equivalent; 189-120A,B and 189-121A,B or equivalent.) First law of thermodynamics, enthalpy, thermochemistry, bond energies. Second law of thermodynamics: the entropy and free energy functions. Chemical and thermodynamic equilibrium states. Phase rule. Colligative properties of ideal solutions. Electrochemistry, electrochemical cells. Liquid and liquid surfaces. Chemical kinetics.
Professors Eisenberg & Patterson

180-250A SELECTED TOPICS IN ORGANIC AND PHYSICAL CHEMISTRY 3(3-0-6). (Prerequisites: 180-212A,B and 180-213A,B.) Chemical kinetics and introduction to catalysis. Chemistry of amines, alcohols, ethers, acids, esters and carbonyl compounds. The topics to be discussed will be of particular interest to students in Chemical Engineering.
Professors Farrell and Grosser

180-331A INORGANIC CHEMISTRY OF THE SOLID STATE 3(3-0-6). (Prerequisites: 180-110A and 180-120B or equivalent) Primarily, but not exclusively, for engineers. Electronic structure and properties of elements in relation to the Periodic Table. The solid state: structure, bonding, magnetic properties of metals and alloys. Descriptive chemistry of the metals.
Professor Hogan

DEPARTMENT OF GEOLOGICAL SCIENCES

Chairman
R. Doig

Courses Offered By The Department

186-210B INTRODUCTORY MINEROLOGY 3(2-3-4). Structures, composition and properties of the major rock-forming and ore minerals.
Professor Francis

186-221A GENERAL GEOLOGY 4(3-2-7). A survey course in physical geology with emphasis on economic and engineering aspects.
Professor Grice

186-232A STRUCTURAL GEOLOGY 3(2-3-4). (Prerequisite: 186-221A or equivalent.) A systematic survey of rock structures, their origins and practical importance.
Professor Eakins

186-440B. MINERAL DEPOSITS 3(2-3-4). (Prerequisites: 186-210B, 186-232A.) Nature, origin, mode of occurence and classification of deposits of metallic and non-metallic minerals; typical occurences; geographical distribution.
Professor MacLean

DEPARTMENT OF MATHEMATICS

Chairman
E. Rosenthall

Courses Offered By The Department

189-261A,B LINEAR ALGEBRA AND DIFFERENTIAL EQUATIONS I 3(3-1-5). Matrices and determinants, solution of systems of linear algebraic equations, introduction to vector spaces, linear dependence and independence, linear operators; first order differential equations; theory of linear differential equations; complex functions of a real variable; solution methods for linear constant coefficient differential equations; series solutions of variable coefficient differential equations; special functions.

189-262A,B LINEAR ALGEBRA AND DIFFERENTIAL EQUATIONS II 3(3-1-5). (Prerequisite: 189-261. Co-requisite: 189-263.) Laplace transform techniques; similarity transformations, matrix diagonalization, solution techniques for systems of linear constant coefficient differential equations; nonlinear differential equations and stability; linear difference equations; numerical methods for solving ordinary differential equations.

189-263A,B ADVANCED CALCULUS 3(3-1-5). Improper integrals; sequences and series; partial derivatives, implicit functions, Jacobians; Taylor's theorem for one and several variables, approximations; minima and maxima of functions of several variables, constrained extrema; arc lengths, curves; multiple integrals.

189-264A,B INTRODUCTION TO BOUNDARY VALUE PROBLEMS 3(3-1-5). (Prerequisites: 189-261 and 189-263.) Scalar and vector fields, vector differential operators, line integrals; divergence theorem, Stokes' theorem, Green's theorem; partial differential equations of mathematical physics;

eigenvalue problems, Sturm-Liouville theory, Fourier expansions; solution of Laplace, diffusion and wave equations by separation of variables.

189-267A,B LINEAR ALGEBRA AND DIFFERENTIAL EQUATIONS II 3(3-1-5). (Prerequisite: 189-261. Co-requisite: 189-263.) Honours section of 189-262; similar in content, but taught in greater depth and with more challenging assignments.

189-269A,B INTRODUCTION TO BOUNDARY VALUE PROBLEMS 3(3-1-5). (Prerequisites: 189-261 and 189-263.) Honours section of 189-264; similar in content but taught in greater depth and with more challenging assignments.

189-381A FUNCTIONS OF A COMPLEX VARIABLE 3(3-0-6). Analytic functions, elementary functions, Cauchy-Goursat theorem and its consequences, power series, poles and residues, complex inversion theorem, conformal mapping, Schwartz-Christoffel Transformations, applications to problems in engineering and physics.

189-384B PROBABILITY 3(3-0-6). (Co-requisite: 189-267.) Discrete probability distributions and random variables, probability densities and distribution functions, continuous random variables, expectation, sums of random variables, sampling theory, introduction to stochastic processes.

189-385A COMPLEX VARIABLES 3(3-0-6). Analytic functions, Cauchy-Riemann equations, Cauchy's theorem, residue calculus, inversion integral for Laplace transforms, conformal mapping, Poisson's integral formula, analytic continuation, Riemann surfaces, complex variable and integral transform methods of solution to boundary value problems.

DEPARTMENT OF PHYSICS

Chairman
J.M. Robson

Courses Offered By The Department

198-271B QUANTUM PHYSICS 3(3-0-6). Special Relativity. The observed properties of atoms and radiation from atoms. Electron waves. The Schroedinger Equation in one dimension. Quantum mechanics of the hydrogen atom. Angular momentum and spin. Quantum mechanics of many electron systems. The diatomic molecule. Basic ideas in nuclear and particle physics.

198-321A MODERN PHYSICS 3(3-0-6). (Prerequisite: 303-282 or 303-287.) The background to Modern Physics: Relativity, the energy-momentum invariant; black-body radiation; Compton effect; Rutherford-Bohr-Sommerfeld Atom. Concepts of Quantum Mechanics: Schroedinger equation, one dimensional problems; the hydrogen atom. Pauli Principle. Zeeman effect. Recent developments.

7 CHANGE OF COURSE NUMBERS

Most courses offered by the Faculty of Engineering have changed number to conform to Senate regulations. For convenience, a list of old and new numbers is provided.

Course numbers which do not appear remain unchanged.

Old Number	New Number
300-010	300-310
300-011	300-211
300-020	300-220
300-030	300-230
300-112	not given
301-001	301-231
301-010	301-201
301-012	301-217
301-102	301-233
301-111	301-202
301-113	301-218
301-203	301-371
301-204	301-372
301-205	301-373
301-206	301-374
301-214	301-321
301-216	301-324
301-230	301-375
301-232	301-376
301-235	301-378
301-239	301-379
301-250	301-327
301-315	301-322
301-317	301-430
301-318	301-461
301-320	301-303
301-407	301-480
301-408	301-481
301-409	301-482
301-420	301-383
301-421	301-304
301-422	301-405
301-423	301-406
301-424	301-410
301-425	301-411
301-426	301-412
301-427	301-413
301-431	301-484
301-433	301-435
301-434	301-436
301-441	301-446
301-442	301-447
301-443	301-448
301-444	301-449
301-445	301-450
301-451	301-428
301-452	301-429
301-561	301-585
302-001	302-201
302-021	302-221
302-097	302-360
302-122	302-222
302-131	302-210
302-191	302-291
302-198	302-462
302-202	302-402
302-204	302-370
302-211	302-311
302-212	302-312
302-241	302-423
302-251	302-351
302-252	302-452
302-262	302-373
302-271	302-471
302-272	302-472
302-283	302-483
302-292	302-392
302-293	302-393
302-299	302-363
302-303	302-403
302-353	302-453
302-361	302-356
302-371	302-455
302-381	302-481
302-386	302-486
302-394	302-494
302-399	302-464
303-001	303-201
303-002	303-202
303-003	303-203
303-004	303-220
303-005	303-205
303-081	303-281
303-086	303-286
303-089	303-289
303-090	303-290
303-106	303-206
303-107	303-207
303-108	303-208
303-109	303-209
303-110	303-310
303-133	303-433
303-182	303-282
303-183	303-283
303-187	303-287
303-191	303-291
303-193	303-293
303-211	303-321
303-212	303-312
303-213	303-313
303-214	303-314
303-215	303-315
303-216	303-416
303-219	303-319
303-230	303-430
303-231	303-431
303-232	303-432
303-235	303-435

Old Number	New Number
303-239	303-439
303-284	303-384
303-285	303-385
303-288	303-388
303-317	303-417
303-318	303-418
303-338	303-322
303-340	303-440
303-345	303-445
303-350	303-450
303-351	303-451
303-360	303-460
303-361	303-461
303-362	303-462
303-363	303-463
303-364	303-464
303-307	303-470
303-392	303-492
304-001	304-201
304-021	304-221
304-131	304-231
304-136	304-236
304-181	304-281
304-191	304-291
304-202	304-302
304-207	304-307
304-222	304-322
304-256	304-356
304-261	304-361
304-276	304-376
304-283	304-383
304-292	304-392
304-324	304-424
305-040	305-240
305-060	305-260
305-090	305-290
305-091	305-291
305-114	305-214
305-141	305-241
305-142	305-342
305-144	not given
305-145	not given
305-150	305-305
305-161	305-261
305-215	305-315
305-219	305-319
305-220	305-520
305-221	305-321
305-222	305-422
305-230	305-330
305-243	305-343

Old Number	New Number
305-246	305-346
305-264	305-364
305-272	305-372
305-273	305-473
305-274	305-474
305-275	305-475
305-317	305-417
305-323	305-423
305-331	305-431
305-333	305-533
305-334	305-434
305-335	305-435
305-371	305-471
305-477	305-447
305-494	305-394
305-534	not given
305-535	not given
306-001	306-201
306-011	306-211
306-012	306-212
306-013	306-313
306-015	306-215
306-101	306-216
306-114	306-414
306-115	306-217
306-123	306-423
306-140	306-340
306-150	306-250
306-151	306-351
306-152	306-352
306-154	306-454
306-158	306-458
306-160	306-260
306-161	306-361
306-162	306-362
306-224	306-424
306-225	306-325
306-227	306-327
306-241	306-341
306-253	306-353
306-263	306-463
306-264	306-464
306-323	306-422
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JANUARY						
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FEBRUARY						
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NOVEMBER						
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JANUARY						
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Faculty of

GRADUATE STUDIES AND RESEARCH

1976/77

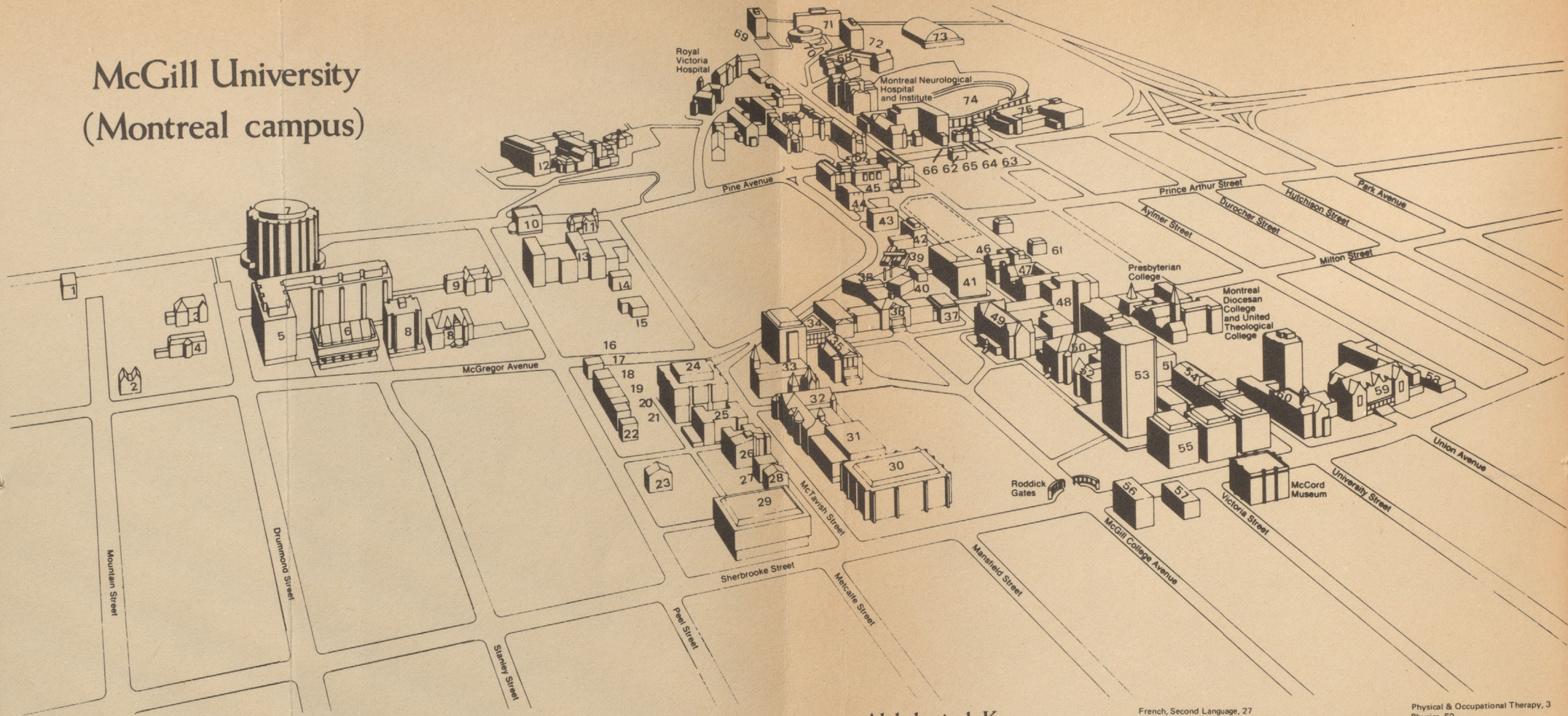
McGill University
Montreal

The University reserves the right to make changes without prior notice to the information contained in this publication, including the alteration of various fees schedules and the revision or cancellation of particular courses.

Students intending to seek membership in a professional corporation in Quebec are reminded that after July 1, 1976 they will be required to show that they possess a working knowledge of the French language, in conformity with the requirements of the Professional Code (Bill 250) and the Official Language Act (Bill 22).

McGill Campus Map

McGill University (Montreal campus)



Numerical Key

1 Beatty Hall
2 Martlet House
3 Davis House
4 Hosmer House
5 Stewart Biological Sciences
6 Greenhouses
7 McIntyre Medical Sciences
8 Chancellor Day Hall
9 Mental Hygiene Institute
10 Purvis Hall
11 Duggan House
12 Allan Memorial Institute
13 Faculty of Education
14 Hugessen House
15 David Thomson House
16 3511 Peel Street
17 3495/91 Peel Street
18 3487 Peel Street
19 3483 Peel Street
20 3479 Peel Street
21 3475 Peel Street
22 3465 Peel Street
23 3437 Peel Street
24 University Centre
25 Peterson Hall
26 Faculty Club
27 3438 McTavish Street
28 3434 McTavish Street
29 Samuel Bronfman Bldg
30 McLennan Library
31 Redpath Library
32 Redpath Hall
33 Morrice Hall
34 Stephen Leacock Bldg.
35 Redpath Museum
36 Arts Bldg.
37 Dawson Hall
38 840 McGregor
39 Old Greenhouse
40 Stationery Stores
41 F. Cyril James Bldg.
42 Foster Radiation Laboratory
43 Eaton Electronics Laboratory
44 Donner Bldg.
45 Strathcona Anatomy & Dentistry Bldg.
46 William & Henry Birks Bldg.
47 Wilson Hall
48 McConnell Engineering Bldg.
49 Macdonald Engineering Bldg.
50 Macdonald Chemistry Bldg.
51 Frank Dawson Adams Bldg.
52 Macdonald Physics Bldg.
53 Burnside Hall
54 Pulp & Paper Institute
55 Otto Maass Chemistry Bldg.
56 Strathcona Hall
57 762 Sherbrooke Street W.
58 Women's Athletics
59 Strathcona Music Bldg.
60 Royal Victoria College
61 3521 University Street
62 522 Pine Ave. W.
63 505 Pine Ave. W.
64 509 Pine Ave. W.
65 515/517 Pine Ave. W.
66 527 Pine Ave. W.
67 Pathology Bldg.
68 Douglas Hall
69 Gardner Hall
70 Bishop Mountain Hall
71 Molson Hall
72 McConnell Hall
73 McConnell Winter Stadium
74 Molson Stadium
75 Sir Arthur Currie Memorial Gymnasium

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McGill University

Faculty of
Graduate Studies and Research
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Montreal, Quebec, Canada H3C 3G1*
Telephone (514) 392-5092

* The official McGill University mailing address is:
McGill University, P.O. Box 6070, Station A
Montreal, Quebec, Canada H3C 3G1

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CALENDAR FOR SESSION 1976–77

1976

June 1	Forms nominating examiners for students's theses are to be returned to the Thesis Office.
June 8 and 9	Convocations
July 2	Last day for submitting completed applications for admission.*
August 16	Last day for submitting Doctoral theses (in time for Fall Convocation).
August 23	Last day for submitting Master's theses (in time for Fall Convocation).
September 7	Non-thesis forms to be returned to the Thesis Office for Fall Convocation.
September 8	Registration begins. Registration forms are to be completed in the departments. It is recommended that new students report to their departments not later than this date.
September 13	Lectures begin, first term.
September 17	Last day for departments to return completed registration forms.
September 27	All thesis reports for Fall Convocation must be returned to the Thesis Office.
October 12	Last day for holding Doctoral Orals for Fall Convocation.
October 29	Last day for changes in first term and full session courses. (Some departments have earlier deadlines.)
November 9	Fall Convocation.
December 17	Lectures end, first term.

1977

January 14	Last day for: 1) changing academic status in current session 2) payment of Winter term fees 3) January registration.
January 17	Lectures begin, second term.
February 1	Last day for applying for graduate fellowships. Forms nominating examiners for students' theses for Spring Convocation are to returned to the Thesis Office.
February 4	Last day for Winter term course changes.
March 14	Last day for submitting Doctoral theses (in time for Spring Convocation).
March 21	Last day for submitting Master's theses (in time for Spring Convocation).
April 1	Usual date for announcing fellowships and other awards.
April 15	Lectures end, second term.
April 25	All thesis reports for Spring Convocation must be returned to the Thesis Office.
May 5	Non-thesis forms to be returned to the Thesis Office for Spring Convocation.
May 9	Last day for holding Doctoral Orals for Spring Convocation.
June 7 and 8	Convocations

*Several departments follow a different rule. If you are in doubt, please inquire of the department in which you wish to study.

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1 GENERAL INFORMATION

ADMINISTRATIVE OFFICERS

ROBERT E. BELL, C.C., B.A., M.A. (U.B.C.), Ph.D. (McG.), D.Sc. (U.N.B., Laval), LL.D. (Tor.), F.R.S., F.R.S.C. **Principal and Vice-Chancellor**

EIGIL PEDERSON, B.A. (Sir G. Wms.), M.A. (McG.), Ed.D. (Harv.) **Vice-Principal (Academic)**

LEO YAFFE, B.Sc., M.Sc. (Man.), Ph.D. (McG.), F.C.I.C., F.A.P.S., F.R.S.C. **Vice-Principal (Administration)**

ALLAN C. McCOLL, D.F.C., B.Com. (McG.), C.A. **Vice-Principal (Finance)**

WALTER HITSCHFELD, B.A.Sc. (Tor.), Ph.D. (McG.), F.R. Met. S. **Vice-Principal (Research) and Dean of the Faculty**

D.C. DONDERI, B.A., B.Sc. (Chic.), Ph.D. (Corn.) **Associate Dean**

V.M. PASZTOR, B.Sc. (Birm.), Ph.D. (McM.) **Associate Dean**

T.C. BRUNEAU, B.A. (San Jose State), M.A., Ph.D. (Calif.) **Secretary of Faculty**

W.D. CROFT, B.A.Sc. (Tor.) **Research Contracts Officer**

B.J. GICK, B.Com. (Sir G. Wms.) **Research Grants and Awards Officer**

L.H. LORD, M.Sc. (Corn.), D.V.M. (Ont. Vet. Coll.) **Animal Care Officer**

C.M. McDOUGALL, D.S.O., B.A. (McG.) **Secretary-General**

J.-P. SCHULLER, B.A. (Ott.) **Registrar**

MEMBERS OF THE FACULTY

Every full-time member of the teaching staff, who is actively engaged in the instruction of graduate students, is a member of the Faculty.

COUNCIL OF THE FACULTY

Council consists of about 200 staff members and about 100 graduate student members.

EXECUTIVE COMMITTEE OF COUNCIL

THE DEAN, *Chairman*
Prof. G.S. CAVADIAS
Prof. T. GOLDSMITH-REBER
Prof. J. KALFF
Prof. M. ONYSZCHUK
Prof. J.D. PFEIFFER
Mr. M. RYAN
Prof. R. SALISBURY
Mrs. F.E. SHLOSSER
Prof. A. TENENHOUSE
Prof. S.P. TOUCHBURN

2 REGULATIONS

GENERAL STATEMENT CONCERNING HIGHER DEGREES

The Faculty of Graduate Studies and Research administers all programs leading to graduate diplomas and higher degrees. It is responsible for the admission of candidates, the supervision of their work and for recommending to Senate those who may receive the degrees and diplomas.

GRADUATE DIPLOMAS

Graduate Diplomas are programs of study under the academic supervision of the Faculty of Graduate Studies and Research. They have as a pre-requisite an undergraduate degree in the same discipline.

McGill University offers other diploma and certificate programs under the supervision of the relevant undergraduate faculties and their Announcements should be consulted for further details.

Graduate Diplomas are offered in:
Air and Space Law
Advanced Social Work Practice
Engineering Aspects of Arid Land Development
Mining Engineering
Geological Sciences
Prosthodontics and Restorative Dentistry

These programs consist of at least one year of full-time study or the equivalent.

All regulations of the Faculty apply to Diploma candidates.

DEGREES

Two categories of programs lead to higher degrees at McGill University: Master's programs and Doctoral programs.

The following degrees are offered:
Master of Architecture (M.Arch.)
Master of Arts (M.A.)
Master of Business Administration (M.B.A.)
Master of Commerce (M.Com.)
Master of Civil Law (M.C.L.)
Master of Education (M.Ed.)
Master of Engineering (M.Eng.)
Master of Engineering (Mining) (M.Eng.(Mining))
Master of Laws (LL.M.)
Master of Library Science (M.L.S.)
Master of Musical Arts (M.M.A.)
Master of Nursing (Teaching) (M.N. (Teaching))
Master of Science (M.Sc.)

Master of Science (Applied) (M.Sc. (Appl.))
Master of Sacred Theology (S.T.M.)
Master of Social Work (M.S.W.)
Master of Urban Planning (M.U.P.)
Doctor of Civil Law (D.C.L.)
Doctor of Education (D.Ed.)
Doctor of Music (D.Mus.)
Doctor of Philosophy (Ph.D.)

Master's Degrees

The Faculty offers Master's degrees of:
Architecture
Arts
Business Administration
Commerce
Education
Engineering
Law
Library Science
Musical Arts
Nursing (Teaching)
Sacred Theology
Science
Social Work
Urban Planning

Residence Requirements

Two full sessions of resident study at McGill University is the normal minimum requirement for a Master's degree. In exceptional circumstances some Master's programs may be completed in one full session; in such cases ALL components of the program must have been completed and evaluated before the commencement of the second session.

Course Work

The candidate is required to pass (with a mark of 65% or better) those courses which are indicated by the Department and are recorded on the approved Registration Form. A few additional courses may be taken, but it is then the responsibility of the student to see that these courses are clearly marked "not required" on the Registration Form. Some departments require the candidate to pass a general examination relevant to his area of specialization.

No specified number of course credits is required for research degrees. The Department concerned will examine the student's previous training and then decide how many of the available courses in the area of specialization or related fields are required to bring the candidate to the proper level for the Master's degree. Due account will be taken of relevant courses passed at any recognized university.

Non-research degrees, which are generally of an applied or professional character, normally specify the course program which the candidate must follow.

Research and Thesis

The candidate for a research degree must present a thesis based on his own research. The subject of the thesis should be entered on the registration form and the title, if not decided at the time of registration must be forwarded in writing through the chairman of the department concerned to the Dean's Office at least two months before the thesis is submitted to the Faculty. A thesis for the Master's degree, while not necessarily requiring an exhaustive review of work in the particular field of study, or a great deal of original scholarship, must show familiarity with previous work in the field and must demonstrate the ability to carry out research and to organize results, all of which must be presented in good literary style. The thesis will not normally exceed 100 pages; in some disciplines, shorter texts are preferred. **For further regulations regarding theses see page 16.**

Language Requirements

Most Master's degree programs do not contain language requirements but candidates who intend to proceed later to a Doctoral degree should take note of any language requirements and are strongly advised to take the examinations in at least one language while working for the Master's degree.

Teaching Skills

A program of activities specifically designed to enable graduate students to improve their teaching abilities is available in many departments or through the Centre for Learning and Development. Students should make arrangements to take such programs through their department.

The Degree of Master of Architecture

Instruction for the degree of Master of Architecture is given in either of the following fields of specialization:
Architectural Design
Housing
Pre-requisites: Bachelor of Architecture or equivalent professional degree.
See also Section "E".

The Degree of Master of Arts

Programs leading to the degree of Master of Arts are provided in the following areas:
Anthropology
Art History
Classics
Communications
Economics
Education
English
French
Geography
German
Hispanic Studies
History
Islamic Studies

Italian
Linguistics
Mathematics
Philosophy
Political Science
Psychology
Religious Studies
Russian
Sociology

Pre-requisites: Bachelor of Arts in the subject selected for graduate work.

See also Section "C".

The Degree of Master of Business Administration

Programs leading to the degree of Master of Business Administration are offered in the Faculty of Management.

Students may specialize in the following areas of concentration:

Accounting and Finance
Behavioural Science and Personnel
Finance
Industrial Relations
International Business
Management Information Systems
Management Science
Marketing
Policy and General Management

Pre-requisites: An undergraduate degree in Arts, Science, Commerce or Engineering plus satisfactory scores in the Princeton Tests for Graduate Studies in Business. Some business experience is preferred.

See Also Section "I".

Master's Degrees in the Faculty of Education

Two types of Master's degrees are offered: M.A. (with thesis) and M.Ed. (without thesis).

The M.A. may be taken in the following areas:

Counsellor Education
Comparative Education
Educational Administration
Educational Psychology
History of Education
Philosophy of Education
Physical Education

The M.Ed. may be taken in the following areas:

Counsellor Education
Educational Administration
Reading
Special Education
Teaching Subjects (Biology, Chemistry, French as a Second Language, English as a Second Language, Geography, History and Physics).

Pre-requisites: A Bachelor's degree with specialization related to the subject chosen for graduate work plus a Permanent Quebec Teaching Diploma or its equivalent.

See also Section "G".

Master's Degrees in the Faculty of Engineering

Two types of programs lead to a Master of Engineering: "Option A" requiring a thesis and "Option B" not requiring a thesis. Both Options are offered in the following areas:

Chemical Engineering
Civil Engineering
Electrical Engineering
Mechanical Engineering

Candidates wishing to specialize in Mining and Metallurgical Engineering should consult Section "E" for regulations concerning the following degrees:

M.Eng. (Mining) (no thesis)
M.Eng. in Mining, Metallurgy and Applied Geophysics
M.Sc. in Mining and Metallurgy

Pre-requisites: Bachelor of Engineering or equivalent, with specialization appropriate for the subject selected for graduate study.

See also Section "E".

Master's Degrees in the Faculty of Law

The degree of Master of Laws is offered in:

Air and Space Law
Comparative Law

The degree of Master of Civil Law is offered by the Institute of Comparative Law.

Pre-requisites: An acceptable degree in Law or equivalent qualifications.

See also Section "F"

The Degree of Master of Library Science

The School of Library Science offers a two year professional program in the principles and skills of librarianship.

Pre-requisites: A Bachelor's degree in Science, Arts, etc. Specialization in the humanities, sciences, or social sciences are preferred. A knowledge of at least one language other than English is expected.

See also Section "H".

Master's Degrees in The Faculty of Music

The Master of Musical Arts (with thesis) is given in the following areas:

Compositon
Musicology
Theory

The Master of Musical Arts in Performance is open to candidates who pass auditions in their specialty.

Pre-requisites: Bachelor of Music or Bachelor of Arts with concentration in the area selected for graduate study.

See also Section "C".

Master's Degrees in Nursing

The School of Nursing offers two types of graduate programs:

Master of Nursing (Teaching)
Master of Science (Applied) in Nursing

Two Options lead to the M.Sc: Option A, Clinical Nursing Practice and Option B, Research in Nursing and Health Care.

Pre-requisites: Preparation in nursing comparable to the Bachelor's degree offered at McGill and accomplishment and development as a nurse. A current nursing registration is required. Non-nurses with a Bachelor's degree may apply for entrance to a Qualifying Year.

See also the Announcement for the School of Nursing.

The Degree of Master of Science

Programs leading to the degree of Master of Science are provided in the following areas:

Agricultural Chemistry
Agricultural Engineering
Agronomy
Anatomy
Animal Science
Biochemistry
Biology
Chemistry
Computer Science
Crystallography
Electrical Communications
Entomology
Epidemiology and Health
Fluid Mechanics
Geography
Geological Sciences
Geophysics
Glaciology
Horticulture
Human Communication Disorders
Marine Sciences
Mathematics
Medicine, Experimental
Meteorology
Microbiology and Immunology
Microbiology (Macdonald College)
Mining and Metallurgical Engineering and Applied Geophysics
Neurology and Neurosurgery
Oral Surgery
Otolaryngology
Parasitology
Pathology
Pharmacology
Physics
Physiology
Plant Pathology
Prosthodontics and Restorative Dentistry
Psychiatry
Psychology
Radiology
Renewable Resources
Soil Science
Surgery, Experimental
Wildlife Biology

Pre-requisites: Bachelor of Science in the subject selected for graduate work.

See also Sections "B" and "D" and "E".

The Degree of Master of Science (Applied)

This degree was designed to provide postgraduate training of a professional and vocational character, with less emphasis on theoretical knowledge and research than in Master of Science programs, but with no lower standards either for admission or completion of requirements. Two years of full-time study or equivalent, is required with an emphasis on course work.

Programs are available in:
Computer Science
Geological Sciences
(Engineering Geology or Mineral Exploration)
Human Communication Disorders
Microbiology and Immunology
Nursing
Physical Therapy
Psychology

Pre-requisites: A Bachelor's degree in the subject selected for graduate work.

See also Sections "B", "D" and "E" and the Announcements for the Schools of Nursing and Physiotherapy.

The Degree of Master of Social Work

The M.S.W. degree represents a second level of professional study in which students build competence in a chosen field of practice.

Pre-requisites: Bachelor's degree in Social Work including courses in statistics and social science research methods. See also the Announcement of the School of Social Work.

The Degree of Master of Sacred Theology

A program leading to the degree of Sanctae Theologiae Magister is given in the Faculty of Religious Studies. This degree is primarily for those who intend to enter the ministry of the Christian Church or another religious institution, or proceed to teaching in schools or to certain forms of social work.

Pre-requisites: B.A. with specialization in religious studies or theology.

See also the Announcement of the Faculty of Religious Studies.

The Degree of Master of Urban Planning

The program requires a minimum of two years residence and a 3 month internship with a member of a recognized planning association.

Pre-requisites: Bachelor's degree in any one of the following: Anthropology, Architecture, Economics, Civil Engineering, Geography, Law, Management, Political Science, Social Work, Sociology or Urban Planning, with adequate knowledge of quantitative techniques.

See also Section "E".

Doctoral Degrees

The Degree of Doctor of Civil Law

Doctoral programs are offered by the Institute of Air and Space Law and the Institute of Comparative Law. Both are predominantly research degrees awarded on the basis of a thesis that represents an original contribution to the development of legal science.

Pre-requisites: B.C.L. or LL.B. and usually LL.M.

See also the Announcement of the Faculty of Law.

The Degree of Doctor of Education

A program leading to a doctorate in Education is offered by the Department of Counsellor Education. It is a professional program providing advanced training in one of three areas of specialization:

Elementary School Counselling
Secondary School Counselling
Student Personnel Counselling

A thesis is required.

Pre-requisites: M.Ed. in Counsellor Education

See also Section "G".

The Degree of Doctor of Music

The Doctor of Music degree is offered in Composition. The Doctoral thesis consists of a musical composition of major dimensions together with a written analysis of the work. The composition is presented by the candidate in concert. The regulations set forth for the Ph.D. generally apply also to the D.Mus.

Pre-requisite: M.M.A. in composition.

See also Section "C".

The Degree of Doctor of Philosophy

Pre-requisites: An undergraduate degree relevant to the subject chosen for graduate work. Some departments require all Ph.D. candidates to hold a Master's degree in the same subject. Many departments will require candidates who do not already hold an appropriate Master's degree to register for such a degree rather than for the Ph.D. directly. They may later recommend to the Executive Committee of the Faculty that candidates of undoubted promise should be allowed to proceed directly to the Ph.D. degree without being required to submit a Master's thesis.

Programs leading to the degree of Doctor of Philosophy are offered in the following areas:

Agricultural Chemistry
Agricultural Engineering
Agronomy
Anatomy
Animal Science
Anthropology
Art History
Biochemistry
Biology
Chemical Engineering
Chemistry
Civil Engineering
Classics
Computer Science
Economics
Electrical Engineering
English
Entomology
Epidemiology and Health
French
Geography
Geological Sciences
German
History
Human Communication Disorders
Islamic Studies
Linguistics
Marine Sciences
Mathematics
Mechanical Engineering
Medicine, Experimental
Meteorology
Microbiology and Immunology
Microbiology (Macdonald College)
Mining and Metallurgical Engineering and Applied Geophysics
Neurology and Neurosurgery
Parasitology
Pathology
Pharmacology
Philosophy
Physics
Physiology
Plant Pathology
Political Science
Psychology
Religious Studies
Renewable Resources
Russian
Sociology
Soil Science
Surgery, Experimental

Residence Requirements

Candidates must follow a program of at least three years resident study at the University or associated institution of higher learning or research; this is a minimum requirement, and there is no guarantee that the work of the degree can be completed in this time.

It is the custom for candidates to spend the greater part of each summer in work upon the thesis problem, and those who do not do so are unlikely to complete a satisfactory thesis in the prescribed minimum time; in certain subjects, e.g. in Agricultural Sciences, summer researches are indispensable.

A student who has obtained a Master's degree at McGill University or at an approved institution elsewhere, and is proceeding **in the same subject** to a Ph.D. degree may, on the recommendation of the department, be permitted to count the work done for the former as the first year (Ph.D. 1) of resident study for the Doctor's degree.

The attention of students seeking admission on this basis is drawn to the language requirements for which they are advised to prepare themselves in advance.

Comprehensive Examinations

The first two years (Ph.D. 1 and 2) include instruction, training and direction in the candidate's field of study, with the object of providing thorough knowledge of the particular subject and its relation to cognate branches of learning; this period should also prepare the candidate for independent investigation. The comprehensive examination is normally held at the end of the second year, unless otherwise specified by departmental regulations approved by the Faculty. This examination covers all graduate work previously taken by the candidate, including prescribed reading, and may also include any work fundamental thereto. The candidate must show a good general knowledge of the whole branch of learning which has been selected as the major subject. The examination may be written or oral or both. The result of the examination determines whether the candidate is allowed to proceed with his or her candidature. The final years (Ph.D. 3 and others) are devoted chiefly to the preparation of the thesis, the research for which is normally begun in the first year.

The candidate is also required to pass (with a mark of 65% or better) in the courses indicated by the department, and recorded on the approved Registration form, unless they have been marked "not required".

Language Requirements

Most departments in the Faculties of Agriculture, Education, Engineering, Management, Medicine and Science do not require a language examination. Students should enquire of their departments if there are any such requirements or whether any other requirements have been substituted for those relating to languages.

Departments in the Faculties of Arts, Music and Religious Studies usually require proficiency in one or two languages other than English. In all cases **students should consult departmental regulations concerning language requirements.**

Language requirements for the Ph.D. degree are met through demonstrated reading knowledge. The usual languages are French, German, or Russian, but in particular instances another language may be offered on the recommendation of the department and the authorization of the Associate Dean.

The normal examination requirements are:

i. One examination in each of two languages

OR

ii. two examinations in a single language. The first examination is comparable in difficulty with that indicated in (i) above; the second, normally written one year later, demands greater proficiency. **All** language requirements must be fulfilled and the marks reported to the Faculty Office **before** the Dean will accept the thesis.

Language Reading Proficiency Examinations in French, German or Russian will be conducted by the Departments offering instruction in those languages. Studerts may, however, demonstrate competence by a pass standing in two undergraduate language courses taken at McGill at a level deemed acceptable by the Associate Dean.

Some Departments require candidates to take the Language Examnations administered by the Educational Testing Service, Princeton.

Candidates are advised to discharge their language requirements as early in their program as possible.

The Departments of French, German and Russian offer courses open to Ph.D. candidates to help them acquire the necessary reading knowledge of the language.

Students expecting to enrol in Professional Corporations in the Province of Quebec are advised to become fluent in both spoken and written French.

Courses in French language are available at the Centre for Teaching French as a Second Language. The teaching is intensive and class sizes are kept small. While undergraduate students are given preference, graduate students who are certain they can devote sufficiert time to the work may enrol.

Thesis

The thesis for the Ph.D. degree must display original scholarship expressed in satisfactory literary form and must be a distinct contribution to knowledge. The subject of his thesis must have been approved by the Chairman of the Department and entered on the Registration Form. The exact title must be submitted to the Thesis Office at least TWO months before thesis submission.

Seven copies of the thesis must be provided by the candidate. Of these, two copies will be retained by the University and five copies returned to the candidate. (Some Departments may require one or more additional copies.)

Special regulations for the Ph.D. degree in particular departments are stated in the entries of these departments.

Thesis Oral Examination

After the thesis has been received and approved, a final oral examination is held on the subject of the thesis and subjects intimately related to it. This is conducted in the presence of a Committee of at least five members approved by the Dean of the Faculty on behalf of the Executive Committee, and presided over by him or by a Pro-Dean nominated by him. The Chairman of the candidate's department and his Thesis Supervisor are regularly invited to be members of the Committee; at least one member of the Committee is appointed from outside the candidate's department.

Ad Hoc Programs

In special cases where a student wishes to take a Master's or a doctoral degree either in a department not currently authorized to offer one, or in an interdisciplinary area, direct application may be made to the Dean of the Faculty to authorize an **ad hoc** degree program.

GRADING SYSTEM

Classification of Marks:

A — 80—100%
B — 65—79%
F — 0—64%

Some departments evaluate performance by the grades: Pass, Fail. This system of evaluation is usually restricted to seminar courses or group projects.

Students who obtain marks between 55 and 64% in courses not required for the degree sought may, on recommendation of the major department, be recorded as having "passed at the undergraduate level".

Student who have failed in required examinations are permitted to write supplemental examinations only on the recommendation of the department and with the permission of the Associate Dean.

A student who has failed in any required course and has not received permission to attempt a supplemental examination will be required to withdraw. Only under exceptional circumstance may permission be granted by the Associate Dean, on the recommendation of the department, for the student to repeat any such course. In such a case the student may be required to pay the fee charged to special students for the course in question.

Transcripts can be obtained on application to the Registrar's Office, F. Cyril James Administration Building, or to the Centre for Continuing Education, 772 Sherbrooke Street West, where applicable.

ADMISSION

Admission Requirements

Applicants should be graduates of a university of recognized reputation and hold a Bachelor's degree equivalent to a McGill Honours degree in a subject closely related to the one selected for graduate work. This implies that about one third of all undergraduate courses should have been devoted to the subject itself and another third to cognate subjects. Some Major Programs (at McGill and elsewhere) contain the necessary amount of specialization and may qualify the applicant for consideration.

The applicant must present evidence of high academic achievement: a standing equivalent to a Cumulative Grade Point Average (CGPA) of 2.8 out of a possible 4. High grades are expected in courses considered by the Department to be preparatory to the graduate program.

Some departments impose additional requirements and even though the applicant may appear to satisfy the general admission requirements, acceptance into a graduate degree program is not guaranteed.

Graduate Record Examination

The attention of applicants for admission to the Faculty is directed to the Graduate Record Examination (Educational Testing Service, Princeton, N.J. 08540). This examination consists of a relatively advanced test in the candidate's specialty, and a general test of his attainments in the several basic fields of knowledge, for which no special preparation is required or recommended. It is offered at many centres, including Montreal, several times a year; the entire examination occupies some eight hours, and the total fee does not exceed $20.00. Applicants to the Graduate School of Business must submit scores on the Admission Tests for Graduate Studies in Business. Only some departments uniformly require applicants to write the examination, but any applicant who has written either the general aptitude or the advanced test is advised to submit the scores along with his/her other admission material.

This credential is of special importance in the case of applicants whose education has been interrupted, or has not led directly towards graduate study in the subject selected. In such cases the department has the right to insist on a report from the Graduate Record Examination or some similar test. High standing in this examination will not by itself guarantee admission. The Miller Analogies Test may be used similarly. Some departments of the Faculty of Education also require the taking of various tests.

In cases of doubt as to proficiency in English, an applicant may be required to submit the results of tests administered by the Educational Testing Service.

Admission to a Qualifying Year

Some applicants whose academic degrees and standing entitle them to serious consideration for admission to graduate studies, but who are considered inadequately prepared in the subject selected may, with the permission of the department concerned, and of the Associate Dean be admitted to one *"Qualifying Year"*. The courses to be taken in a **"Qualifying Year"** will be prescribed by the department concerned. "Qualifying students" are registered in the Graduate Faculty, **but not as candidates for a degree.** Only one qualifying year is permitted. In cases where a department recommends a change of registration from "Qualifying Year" to Master's Degree 1st Year" **this change must be made prior to January 15.** Completion of the work of the qualifying year does not automatically entitle the student to proceed towards a degree. Students who are ineligible for a qualifying year may apply to the appropriate undergraduate faculty for admission as regular or special

students, and seek admission to the Graduate Faculty at a later date.

Admission to a Second Degree Program

A candidate with a given higher degree may apply for admission to a second degree program at the same level but **in a different subject.** The normal admission requirements must be met and all the usual procedures followed.

APPLICATION

Applications for admission should be made on special printed forms which may be obtained at the Dean's Office. Applicants (with some exceptions) who are **not** McGill graduates are required to ask two instructors familiar with their work to send letters of recommendation to the Dean. All applicants must themselves send, or ask the appropriate university authorities to send, two certified copies of their complete university-level academic record to date. For McGill graduates the appropriate authority is the Registrar.

Note: A fee of $15.00 in Canadian funds **must** accompany each application from a graduate of a university other than McGill, otherwise **it cannot be considered.** This sum must be in negotiable form, such as a bank draft or money order (but not in cash), at the current rate of exchange, and will not be refunded.

It is desirable to submit a list of the titles of courses taken in the major subject, since transcripts often give code numbers only. The applicant should also indicate the branch of the major subject in which further study is desired.

Completed applications, with supporting documents, should reach the Dean's Office on or before July 3. (Note: **Several Departments set much earlier deadlines.)** Applications received after the prescribed dates may not be considered unless this concession is recommended by the Department concerned. Candidates will be notified of acceptance or refusal as speedily as possible.

The programs leading to master's degrees in Education normally begin with a Summer Session so that there are different dates for application and registration in this case. Candidates for higher degrees in Education should consult that Faculty beforehand as to application deadlines, date of commencement of courses and other details.

REGISTRATION

Regular Procedures

Approved candidates must consult the department in which they intend to study, with regard to choice of courses and subject of investigation. Formal application for permission to attend the courses selected, and for approval of the subject of investigation, must then be made on the appropriate Registration Forms obtainable in the department. Language examinations should be entered on these forms, if required. These forms require the signature of the candidate, of the chairman of the department concerned, and of the professor appointed to act as director of the candidate's research or supervisor of his thesis, and are normally completed in consultation with the department; students are warned that it may take a week to arrange and complete such consultations. **Registration takes place in September.** The department may send the completed forms to the Dean's Office at any time but positively no later than September 17. Full instructions concerning registration will be supplied by each department. A delay in registration will involve a late fee penalty. Candidates should in any case be prepared to attend the regular courses of instruction, which begin on or shortly after September 13.

The Registration Forms will be scrutinized by the Associate Dean on behalf of the Executive Committee of the Faculty, and, if approval is given, the sutdent's identity card will be validated at a time and place determined by the Registrar's Office. The student will be told what fees to pay and where to obtain a validated identity card when he registers. The student may meanwhile attend lectures, etc., on the assumption that the registration will be approved, but is not officially accepted into the program until final approval has been given. **The prescribed penalty for late registration is $10 between September 22 and October 2 and $25 thereafter.** Students may pay their fees in two instalments. However, a first payment must be made within ten days of the date of registration. **There is a penalty for late payment of fees.**

January Admission

In special circumstances, students may be admitted to commence their studies at the beginning of the second term. In such an event, registration must be completed by January 14.

Registration at the Centre for Continuing Education

Students registered in the Graduate Faculty who are taking evening courses for credit must also register with the Centre for Continuing Education at the appropriate time, otherwise their marks will not be sent to the Graduate Faculty.

If such courses are required as part of the degree program their cost will be included in the regular tuition fee for the degree. Transfer forms, available at the Graduate Faculty Office, must be completed before registering at the Centre. The Graduate Faculty reserves the right to place limitations on the number of Continuing Education courses taken for any one program.

Procedures for Ad Hoc Programs

Before the Executive Committee of the Faculty will authorize the acceptance of a student into an *ad hoc* program, it must receive a favourable report from a committee constituted to examine the program in question. The candidate, through the Supervisor designated by the department most closely related to his research field must submit a research proposal and an outline of the course work needed to prepare him for a Comprehensive Examination in the relevant field.

Once the request has been approved, the candidate may register following all the regular procedures. It is customary for *ad hoc* Ph.D. or Master's degree candidates to be attached for administrative purposes to a department, but they are under the direct supervision of the Faculty of Graduate Studies and Research which receives annual reports from the candidates' Supervisory Committees.

Additional Sessions

Candidates who have completed their residence requirements may register for Additional Sessions following the regular registration procedures. It is expected that at this stage all the course work and Comprehensive Examinations will have been completed and the student will be engaged in thesis preparation. If a valid identity card is required, student services and Student Society fees must be paid as well as the Additional Session fee.

All students must register annually and if they have not so registered at the beginning of the academic year they are not eligible to receive their degrees at the following Convocation.

Time Limitations

For students who commenced Master's degree programs during or after the 1974-75 session, the following regulation applies:

Candidates for Master's degrees must complete the degree within four years of initial registration. If the degree is pursued on a less than full-time basis it must be completed within five years of initial registration. Thereafter, students may register for **one more year only** provided the Department concerned so recommends to the Faculty, in writing, giving reasons and suggesting the imposition of such conditions as may seem desirable. After this extension no further registration will be permitted and the student must withdraw from the University.

A student who wishes to submit a thesis, or to complete outstanding degree requirements, after this withdrawal may do so only on the recommendation of the Department concerned and a fee of $100.00 will be charged for re-registration in addition to any other fees required.

For all Doctoral candidates and for those students who first registered for Master's programs before the 1974-75 session the following regulation applies:

By annual registration, as above, candidates may maintain their connection with the University **for five years** after completing their residence requirements; thereafter, they may re-register only if the department concerned so recommends, in writing, suggesting the imposition of such conditions as may seem desirable.

The object of these regulations is to encourage candidates to complete their theses and qualify for their degrees without undue delay.

Withdrawal From a Degree Program

Candidates who fail to register in any year of their studies are automatically considered to have withdrawn.

Candidates whose work is considered by the Department to be unsatisfactory may be asked to withdraw.

Any student who decides to withdraw must complete a Withdrawal Form available from the Faculty Office. Fees will then be refunded according to the conditions outlined in the Fees Section of the Announcement.

Reinstatement

Candidates who have severed their connection with the University can be reinstated only (1) if the department concerned so recommends, in writing, suggesting the imposition of such conditions as seem desirable, and (2) after paying a fee of $40.00 for each session during which they were not registered (up to a maximum of $100), plus such readmission fees not to include the fee for the session for which readmission may be granted.

Non-Resident Status

Departments, with the approval of the Executive Committee, may permit or require candidates to spend one session at another institution; it is understood that this session must be one of fulltime work, and that the institution selected must be able to provide expert supervision and facilities for research appropriate to the candidate, in the field selected.

Permission to spend a required year of residence at another university must be obtained **before** the beginning of the session in which the student will be absent. A program of the work projected and particulars of the institution selected should be sent, accompanied by a letter from the Chairman of the Department, to the Associate Dean of the Faculty who will forward the request to the Executive Committee for approval.

Students who wish to take a leave of absence from the University for one year before returning to complete their residence requirements should first obtain permission to do so both from their departments and the Associate Dean.

In both the above cases, the student **must register as a Non-Resident student,** and pay the non-resident fee. Student services fees are not levied and the I.D. card is not validated.

Registration for Two Degree Programs Concurrently

No student may be registered in two degree programs or in two departments or faculties concurrently without special permission granted by the Executive Committee of the Faculty. Letters of recommendation, including details of the proportions of time that the student intends to allot to each program, must be received from the Chairman of each department concerned.

GRADUATION AND CONVOCATION

Graduate Diplomas, Master's degrees, and Doctoral degrees are granted by Senate to those students recommended for graduation by the Faculty of Graduate Studies and Research. Names of candidates who have completed all their program requirements are presented to Senate on three occasions during the year: January, May and October. Transcripts of successful candidates will indicate the date on which the degree or diploma was granted and this is the official date of graduation.

Convocation ceremonies are held in June and November at which time the degree or diploma is conferred by the Chancellor of the University.

CLASSES OF STUDENTS

Regular Students

"Regular Students" are those students who are proceeding to a degree and who in any given session are attending classes or receiving regular guidance or consultation relevant to their programs from any member of the staff, who wish to write examinations or who are making use of the university's libraries or laboratories or other facilities.

Half-Time Students

In some departments, "Regular Students" are permitted to proceed towards a degree on a half time basis. It is expected that "Half-time Students" will spend 50% of their time in the department participating in course work, seminars, discussions, etc., with the staff and the full-time regular students.

Part-Time Students

Certain degree programs are designated as Part-time and Regular Students may proceed towards the degree at their own pace. "Part-time Students" may enrol in day time courses in the Fall, Winter and Summer sessions and in some Continuing Education courses where indicated by the Department.

"Part-time Students" are reminded that they must complete the degree within the time limitations imposed by the Faculty.

Qualifying Students

Students admitted to a Qualifying Year are known as "Qualifying Students". They are registered in the Graduate Faculty but have not yet been admitted to a degree program. These students take a full load primarily of undergraduate courses as indicated by the Department. A Qualifying Year may not be taken on a half-time or part-time basis.

Special Students

Students who meet the minimum entrance Requirements of the Faculty and wish to take one, or at most two, courses in the Graduate Faculty without intention of proceeding to a degree or diploma awarded by this Faculty are termed "Special Students" of the Graduate Faculty.

In the same category are included students carrying on research in McGill laboratories, without intention of proceeding to a degree. If graduate "special students" subsequently become candidates for higher degrees, they may receive academic credit for relevant graduate courses taken as special students. Students who wish to take further undergraduate courses only, should register as "special students" in the undergraduate Faculty concerned, even if they already hold degrees.

Non-Resident Students

Students who interrupt their residence at McGill for a period elsewhere are known as "Non-Resident Students". They must have obtained permission both from their departments and from the Executive Committee of the Faculty to spend a required year of residence at another university *or* have obtained permission from the Associate Dean of the Faculty to take a leave of absence from McGill.

Medical Interns

Interns, residents and fellows on the staffs of teaching hospitals, associated with the University, and candidates for diplomas in anaesthesia and psychiatry, are considered graduate students.

Visiting Students

"Visiting students" are those students who are registered in a degree program at another university and who have obtained written permission from both universities to take a course(s) for credit towards that degree program. Students studying in the Province of Quebec who are in this category are eligible for a transfer of fees as well as a transfer of credit if the required permission is obtained on special forms. These forms are available from the Graduate Faculty Records Office or the Registrar's Office.

Full-Time McGill Staff

Members of the teaching staff of the University up to and including the rank of lecturer may enroll as candidates for a degree or diploma. If their teaching duties are designated as full-time, they may only enrol as half-time students.

A reduction in fees is granted to full-time lecturers enrolled in degree or diploma programs and forms are available for this purpose at the Graduate Faculty Office. Normal registration procedures must be followed each year.

NOTE: No staff member above the rank of lecturer may be a candidate for a degree at the University..

Similar regulations also apply to non-academic staff and these may be obtained from the Personnel Office.

FEES

The University reserves the right to change any fee without notice. No degree or diploma will be released until all fees are paid in full.

Tuition Fees

Full-time. The tuition fee for a full-time session of resident study in a degree program (e.g. the first required year for a Master's degree or each of the three required years for a doctoral degree) is $570.00.

The second year of a Master's program is $285.00. Dentistry students in Oral Surgery must pay $570.00 in the second year, and $285.00 in the third year.

Half-time. The tuition fee for a half session of full-time study or for a session of half-time study in a degree program is $285.00.

Part time. Students registered in degree programs specifically designated "part-time" by the Faculty and who are taking less than a full course load, may be permitted to pay tuition fees on a per course basis. The per course fee varies according to each course. A full course is **approximately** $114.00 and a half course is **approximately** $57.00.

Additional session. Candidates requiring an additional session beyond the required years for the Master's degree or the three required years for a doctoral degree must pay a registration fee of $40.00.

Non-resident. The registration fee is usually $40.00 unless otherwise specified by the Executive Committee or the Associate Dean of the Faculty.

Special. A "special student" is not enrolled for any degree program and tuition fees are assessed on a per course basis. A full course is **approximately** $114.00 and a half course is **approximately** $57.00 though the fees vary according to each course. A special student carrying on research in McGill laboratories, but not taking courses, will normally pay the cost of one full course per session (Approximately $114.00).

Tuition Fee for a Qualifying Year

The Qualifying Year constitutes one full year of study and the tuition fee is $570.00.

Tuition Fee for a Master's Degree

The minimum tuition fee for a Master's degree is $855.00. ($570.00 for the first residence year and $285.00 for the second.) This minimum must have been paid by the time of graduation in addition to any fees incurred for a Qualifying Year or Additional Sessions or Non-resident years. Candidates, even those who register in January or are eligible to graduate early, please note that there are only two exceptions to this regulation:

i) A candidate who has earned a diploma in the same subject may, in some departments, be admitted into the second year of a Master's program. The minimum tuition fee in such a case is $570.00.

ii) A candidate who has already completed all the requirements for a Master's degree may request permission from the Associate Dean to be exempted from the second year of residence. The minimum tuition fee in such a case is $570.00.

Exemptions for half a year of residence are never granted.

Tuition Fee for a Doctoral Degree

The minimum tuition fee for a Doctoral degree is $1,710. This minimum must have been paid by the time of graduation in addition to any fees incurred for Additional Sessions or Non-resident years.

There is only one exception to this regulation:

A candidate who has obtained a Master's degree **in the same subject** may be admitted to the second year of the Doctoral program. The minimum tuition fee in such a case is $1,140.00.

Candidates who complete all the components of their degree in a shorter period of time than is specified for the residence period may apply to the Associate Dean for permission to graduate early but must still pay the minimum tuition fee.

Fees for Staff Candidates

Full-time lecturers who qualify for the reduced fees pay $25.00 per year.

A staff candidate on deposition of a thesis is required to pay a thesis examination fee: $75.00 for a Master's thesis and $100.00 for a Doctoral thesis.

Student's Societies and Student Services Fees

All students, with the exception of those classed as "non-resident" students or "additional session" students who do not wish to hold a valid Identity card, are required to pay fees for students' societies and student services in addition to any tuition fees. The University, on behalf of the Students' Societies and Student Services, collects the following fees: $29.50 for student societies and $70.00 for student services for a full-time year of study (This includes Visiting students taking a full-time year of study at McGill.); $29.50 for students' societies and $35.00 for student services for a half-time year of study and

for the second year of a Master's program; students in programs designated "part-time" special and visiting students, pay according to the number of courses taken. The minimum for "part-time" students is $15.00 for students' societies and $20.00 for student services (excluding Athletics but at the discretion of the Director of Athletics, a student may participate in the Athletics program upon payment of an additional $30.00).

Macdonald College student society fees are $34.00. The Student Services fees will remain as above.

Any questions concerning the above student fees should be directed to the Dean of Students.

Upon payment of the fees required for student services and student societies, graduate students are entitled to the following:

a) Medical examination (compulsory); daily consultation service and hospital treatment.
b) Access to the gymnasium, swimming pool, and tennis courts.
c) Opportunities for exercise with various athletic clubs and eligibility for intercollegiate and other teams.
d) Admission (by identity card) to the students' section at all intercollegiate games played at McGill.
e) At Macdonald College slightly different rules apply. Here, graduate students are entitled to medical attendance, major operations excepted, on the same basis as other students. Graduate students at Macdonald College are entitled to participate in the activities of the various organizations under the Students' Council and to have one representative on the Students' Council. Graduate students at Macodonald College are required to pay an additional Students' Activities Fee.

Graduation Fee

A $10.00 fee will be charged to all students when they graduate. This fee covers all expenses in connection with graduation including academic dress and/or *in absentia* charges.

Re-Submission Fee

A candidate whose thesis is judged unsatisfactory by the examiners may be permitted by the Faculty to present a revised thesis, for a subsequent Convocation, upon payment of the following re-submission fees:

Master's degree ..... $ 75.00
Doctoral degree..... $100.00

If a new session of study is entered the student will be required to pay the normal fees for that session in addition to the re-submission fees.

Supplemental Examination Fee

Fees for supplemental examinations, granted under special circumstances by permission of the Dean on the recommendation of the department, are payable in advance at $10.00 per paper ($15.00 for examinations written at the Centre for Continuing Education).

Payment

All fees are payable in Canadian currency.

Fees are due and payable at the Cashier's Office, F. Cyril James Administration Building, within ten days of registration. (Macdonald College students must pay their fees at the Cashier's Office at Macdonald College.) If paid in instalments the second is due on January 15.

Students who have not paid their fees will have their registration cancelled and no credit will be given for work done during that period.

Late fees are also charged as follows:
Registration, after September 17 ..... $10.00
Registration, after September 28 ..... $25.00
Payment of fees, after 10 days after registration, up to 30 days..... $10.00
Payment of fees, after 30 days $25.00

Withdrawal Policy

Students who wish to withdraw from a course(s)* or who wish to withdraw entirely from the University must complete the necessary form and submit it to the Records Office of the Faculty of Graduate Studies and Research as soon as possible. The effective date for refunds will be the date on which the official withdrawal form was completed. NOTE: Dates of notification of the course instructors, of research supervisors, of departmental offices or of discontinuance of class attendance will not suffice. Only the tuition portion of the fee is subject to the refund policy.

The dates for refunds for students paying **per course** or **withdrawing from the University** for 1976-77 are as follows:

Fall Term	Winter Term	Refunds
Up to October 15	Up to February 18	100% (minimum charge of $50.00 in case of complete withdrawal)
October 16 — 31	February 19 — 28	50%
November 1 — 19	March 1 — 18	25%
After November 19	After March 18	No refund

No refund of the student's societies and student services fees will be made after October 15 for the Fall Term or February 18 for the Winter Term.

*Course change forms for withdrawing or adding courses are available in Departmental Offices or in the Records Office of the Faculty of Graduate Studies and Research. Please note that course changes must be made with the approval of the Departmental Chairman or his Deputy.

FELLOWSHIPS, SCHOLARSHIPS AND PRIZES

Fellowships, scholarships and prizes are awarded competitively on the basis of academic merit. Details of the fellowships and other awards available to postgraduate students are found in "POSTGRADUATE AWARDS, FELLOWSHIPS AND BURSARIES", a booklet which can be obtained from the Registrar or from the Graduate Faculty Fellowships Office. The booklet also describes exchange programs which provide money for students who want to study abroad.

A student who applies to the Graduate Faculty for a fellowship is considered for every fellowship or award for which he/she may be eligible. These range up to a maximum value of $4,500 plus fees.

Applications can be obtained from

Graduate Faculty Fellowships Office
Room 311, Dawson Hall
McGill University
P.O. Box 6070, Station A
Montreal, Quebec, Canada H3C 3G1

The completed application, plus at least 2 letters of recommendation and complete transcripts of post-secondary education, must be received in the same office by **1 February** before the Fall term in which the student hopes to receive a fellowship. Candidates will be notified on 1 April.

Some awards are administered by McGill departments or institutes. They are listed in the fellowships booklet described above. Values, application procedures and due dates vary widely, and are separately described for each award.

A third type of award is offered by private institutions and public agencies. The Government of Canada, through the Canada Council, the National Research Council and the Medical Research Council, offer fellowships which range in value from $4,500 to $7,000. These programs require special applications forms and procedures which are described in the fellowships booklet. Application dates for these fellowships are very early in the Fall term of the year before the fellowship is to be held. The Government of Quebec offers postgraduate fellowships to residents of Quebec; they range in value from $3,000 to $9,000. Applications are due in early February. Other similar programs are described in the Postgraduate Awards booklet.

Canadian citizens or landed immigrants who have been resident in one province for more than a year are eligible to apply for loans, gauranteed by the federal government, which are awarded on the basis of need and which need not be repaid while the recipient is a full-time student in good standing. Some provinces also award non-repayable bursaries on the basis of financial need. The addresses of the provincial loan agencies are listed in the Postgraduate Awards booklet.

Foreign students planning to attend McGill should have a firm commitment for their necessary financial support **before** they arrive in Montreal. **There is very little probability of winning an additional award, or of obtaining financial support,** especially during the first year of study.

TEACHING ASSISTANTSHIPS AND DEMONSTRATORSHIPS

Many departments require the services of some graduate students as teaching assistans or demonstrators. These may be employed up to 12 hours weekly during the session without losing status as full-time graduate students.

In some departments Research Assistantships deriving from special research funds are also available. In most though not all cases the research in question can be used by the student for his/her thesis.

In all cases the appointment is recommended by the Chairman of the department concerned on the basis of the documents supplied along with the application for admission.

It is not the general policy of the University to waive tuition or other fees for Demonstrators, Assistants, or Fellows, though in some cases provision is made for a basic stipend plus the amount of the fees, while certain graduate scholarships cover the cost of fees only. Generally speaking, assistantships, demonstratorships and fellowships provide subsistence throughout the academic session only, while research assistantships may run throughout the calendar year (though some are available in the summer months only); in no case are the funds adequate to defray the cost of coming from or returning to a distant country.

GENERAL INFORMATION FOR NON-CANADIAN STUDENTS

A pamphlet describing immigration regulations in detail and containing notes and guidance to students from other countries is available from Canadian immigration offices, Canadian Embassies and British Consular offices, or from the Immigration Branch, Department of Citizenship and Immigration, Ottawa, Canada. Local immigration officers will be ready to give advice and help.

A useful handbook entitled **University Study in Canada** can be obtained from Canadian Embassies, Consulates, and the office of High Commis-

sioners and Trade Commissioners. A leaflet entitled **Notes for Foreign Students Who Wish to Attend a Canadian University** may be obtained from the Association of Universities and Colleges of Canada, 151 Slater St., Ottawa, Ontario K1P 5N1.

Further information may also be found in the McGill University **General Announcement,** available from the Registrar's Office.

Notice to all resident students and to all those accepted to enter the Faculty WHO ARE NOT CANADIAN CITIZENS AND WHO ARE NOT LANDED IMMIGRANTS:

In the Province of Quebec, holders of student visas cannot establish legal residence in the Province and therefore do not qualify for inclusion in the Quebec Health Insurance Plan. As a result, such students who need hospitalization may find themselves facing very heavy financial charges. Senate has therefore ruled that from September 1, 1967, all non-Canadian students will be required to enter into the Health Insurance Plan operated by the Canadian Premier Life Insurance Company.

Students must make arrangements to pay the premium through the Student Aid Office.

A descriptive leaflet is available from the Dean's Office or the Student Aid Office. For additional information apply to the office of the Insurance Company.

Post-doctoral Fellows registered with the University also come under the same insurance provisions.

SUMMER SESSION

Graduate courses are available in some areas during the Summer and the Summer Session Announcement should be consulted for a complete listing of undergraduate and graduate level courses.

Students taking graduate work in Education are strongly advised to enroll in the Summer Session and many programs can only be completed by participation in Summer Session studies.

Registration for students in the Faculty of Graduate Studies and Research takes place through this Faculty Office. It is the responsibility of the student to obtain a Registration Form from the Faculty Office, have the completed form authorized by the Department and return it to the Faculty Office.

If the Summer Session courses are REQUIRED as part of the degree program and the student has already paid full-time tuition fees ($285 per term — flat rate) no further tuition fees are levied for Summer Session courses.

Part-time students (or students paying on a per course basis) must pay the full tuition fee for Summer Session courses at the time of registration (A Bank Draft or Money Order is required).

Many Summer Session courses have a limited enrollment and students are advised to reserve a place in such courses as early as possible. Graduate students intending to take restricted undergraduate courses MUST come IN PERSON to the Graduate Faculty Office where arrangements will be made with the Summer Session Office to reserve a place in the class.

The Summer Session is divided into two parts and each part is subdivided into two "terms" as follows:

Part I	1st Term	May 10 — May 28
(L courses)	2nd Term	June 1 — June 18
Part II	1st Term	July 5 — July 23
(C courses)	2nd Term	July 27 — Aug. 13

FRENCH SUMMER SCHOOL

The French Summer School is a residential program offering cultural activities, undergraduate courses and graduate level courses leading to a Master's degree.

The same admission standards are required for acceptance into the M.A. (French Summer School) as for the M.A. in the French Department. A Qualifying Session may be necessary before acceptance into the Master's program. All the regulations of the Graduate Faculty apply to candidates for the M.A. (French Summer School).

Fees for the qualifying session and each of the four following sessions are $50.00 deposit plus $400.00 for Canadian students, $50.00 deposit plus $450.00 for non-Canadian students. These include participation in the cultural and social activities of the School. Fees for the sixth session (required of candidates proceeding without thesis) are $135.00 for Canadian students, $165.00 for non-Canadian. If the submission of a thesis is delayed beyond the normal date, the candidate must pay an additional registration fee of $40.00 at the beginning of each session until the thesis has been accepted.

Further details may be obtained from the French Summer School Announcement or by writing to:

The Director of the French Summer School
Peterson Hall
McGill University
P.O. Box 6070, Station A
Montreal, Quebec H3C 3G1

REGULATIONS CONCERNING THESES

Dates of Deposition

For graduation at the Spring Convocation, the deadline for deposition of theses is near the end of March, for Fall convocation near the end of August. For the exact dates, the "Calendar of Dates" should be consulted. The deadline for doctoral thesis deposition is always one week earlier than for master's theses.

Due to unforeseen delays with Examiners, an absolute guarantee cannot be given that all procedures will be complete in time for Convocation, even where the deadlines are met. Every effort will be made, however, and incidents of this kind of delay are rare.

Procedures After Deposition

After a *doctoral* thesis has been handed in, it is submitted to the Examiners. The final oral examination is not held until after the Examiners have reported favourably, usually about four weeks after deposition. After all the requirements have been met, and if the next convocation is some time away, the Dean will issue (on request) a certificate stating that the candidate will be recommended to Faculty Council for the award of the degree at the next convocation.

Guidelines for the disposition of Examiners' reports and the organisation and conduct of Oral Examinations may be obtained from the Thesis Office. At any stage during the procedures, candidates have the right of appeal to the Dean or Associate Dean.

The procedures are similar but simpler for the *master's* thesis and there is no final Oral Examination.

Registration and Fees

A thesis can only be submitted by a candidate, i.e., a student registered for the degree in question. In order to remain a candidate, a student must remain registered. If all requirements are met, including deposition of the thesis by the registration date in September, then no fee will be charged. Otherwise either a $40.00 registration or the appropriate tuition fee will be assessed. Candidates should note also that a fee of $10.00 for graduation will be charged. (Full information on fees is given above).

Notice of Deposition of Thesis

Formal notice of the title of a thesis to be deposited must be filed in the Thesis Office by the Departmental Chairman, together with the Nomination of Examiners, by 1 June (for Fall convocation) or by 1 February (for Spring convocation). No subsequent change of title, whether originated by the candidate or any other source, will be accepted unless the change is officially requested by the Department, at least one month before the thesis is deposited. The notice should be the result of consultation between the candidate, the thesis supervisor and the chairman. All three share the responsibility for the prompt completion of this important formality.

The appointment of the Examiners, and communication with them, is the duty and the privilege of the Dean.

Originality and Historical Introduction

a) The candidate should clearly indicate in the preface, or by a separate statement at the beginning or end of the thesis, what elements in the thesis he considers to be contributions to original knowledge. This requirement is mandatory for a doctoral thesis and is recommended in other cases. Theses should also contain an appropriate historical statement of previous relevant work or investigation: "appropriate" does *not* necessarily mean long or exhaustive.

b) The candidate is required to declare, *generally* in the preface, and *specifically* in the text, the extent to which assistance has been given by members of the staff, fellow-students, technicians, or others, in the collection of the material, the design and construction of apparatus, the performance of experiments, and the preparation of the thesis in general. This regulation does not apply to the normal supervision and advice given by the thesis supervisor.

Typographical and Other Specifications

Approved theses for higher degrees are later bound and placed in the Library and are made available to the National Library of Canada. Candidates for such degrees are therefore advised that the Faculty of Graduate Studies and Research requires theses to be prepared in accordance with the following specifications. **Theses not so prepared will not be accepted unless the Executive Committee of Council has given its agreement in advance.**

a) Three copies of a master's thesis and seven copies of a doctoral thesis must be submitted; in each instance two of these will be retained by the University. Copy I will be preserved in the University Library.

Departments desiring copies for other collections should arrange for these with the candidate. One copy of the master's thesis and five of a doctoral thesis will be returned to the candidate.

b) The thesis may be typed with double, or one and one-half spacing, with lines about 6½ inches wide, or in two single spaced parallel columns. Offset or xerographic reproduction of all copies is permissible, but copies 1 and 2 especially must be of high quality. Coated paper will not be accepted.

Diagrams should be drawn with India ink on rag paper or reproduced by photographic, offset or xerographic processes. Diagrams, numerical or summary tables, and parts of the Table of Contents, may appear on left-hand pages (on the back of other material) where this aids in the layout and the general readability of the text. In such cases it may be desirable not to number these left-hand pages, but to identify them as opposite stated page number.

c) The left-hand margin must have a uniform width of not less than 1½ inches; this rule also applies to diagrmas, etc. The right-hand margin need not be aligned but it should be well-defined at approximately a half-inch width. Drawings, maps, plates, etc., if larger than the prescribed page, may be folded so that the flap is not larger than 7 x 11 inches.

Larger drawings, maps, etc., must be folded down to not more than 7 x 10 inches, so that they may be placed in pockets in the binding.

d) Footnotes may be placed either at the bottom of each page or collected at the end of each chapter.

e) The pages constituting each copy of the thesis should be assembled in approved binders. The pages should be perforated near the left-hand edge with punch holes approximately 8½ inches between centres, and should then be assembled and firmly bound, by means of the holes, between stiff covers for protection. The 8½ x 11 "Acco-press" binders sold at the University Bookstore are recommended. Spring binders will not be accepted. On the outside of each binder must be written clearly the name of the candidate, full title of thesis, department, degree sought, date and copy number. The candidate should also affix to the spine of each copy a label showing clearly his surname and the degree for which he is a candidate, together with the copy number.

f) The thesis must be free from typographical and other errors. If copies are deficient in the above respects they will be returned for correction. If these corrections are very numerous the granting of the degree may be delayed on this account.

g) Every thesis should have an adequate table of contents and thorough bibliography of the subject. Immediately following the title page, there should be an Abstract, giving a summary of the thesis, not exceeding 150 words. The rules above regarding format, margins, etc., should be observed with regard to the abstract. Every copy of the thesis must have an English and French abstract. When the language of the thesis is neither English nor French, an English version is required as well as a version in that language and a French version is invited. It is understood that the thesis supervisor has approved the text of the abstract.

h) The student has the option*, subject to the approval of the Department, of producing the thesis in the form of an original paper, or papers, suitable for submission to learned journals for publication. In this case the thesis must still conform to the requirements previously mentioned in the paragraph on "Typographical and other Specifications" and in the paragraph concerning "Supplementary Documents". In such a case, a full introduction and other material (e.g. experimental data or details of equipment and experimental design) may need to be provided in addition. If more than one manuscript is included, connecting text and joint summary-conclusions are required. A mere collection of manuscripts is not acceptable; nor can reprints of published papers be accepted. The present regulations on "Supplementary Documents" should be cited in the introduction.

Candidates are warned that the preparation of the typescript always takes longer than is expected and that sufficient time for checking the typescript carefully for errors before the thesis is deposited must be allowed.

The use of SI (Standard International) units for Master's and Ph.D. theses is strongly recommended. Where such units are not presently in common usage, the first time a unit is used, the SI equivalent should be stated in a footnote.

It is a Faculty objective that the use of SI units in theses be mandatory by the academic year 1979-80.

* This option is extended to 1977.

Supplementary Documents

At the time of deposition of the thesis, the following additional documents must accompany the thesis.

a) Two waiver forms for the University Library; one for the National Library. (Obtainable from the Thesis Office).

b) On separate sheets of paper, a short title of the thesis, of less than 56 characters including spaces, which will appear along the spine of bound copies.

c) Two additional copies of each Abstract, as described under "Typographical and other Specifications". These copies should show the title of the thesis, the name of the author, the name of the department and of the degree sought.

d) Two copies of A List of Descriptors (Key Words). The forms, with instructions for the selection of Descriptors obtainable from the Thesis Office.

e) For doctoral theses, the form required by Dissertation Abstracts (obtainable from Thesis Office) together with another copy of the Abstract and of the title page of the thesis.

Unless there is a specific arrangement to the contrary previously approved by the Dean, copies of accepted theses are deposited in the University Library and a microfilm of the original is placed in the National Library at Ottawa. These Libraries are authorized to make the thesis available for consultation or to distribute microfilm or other copies. The waiver forms are to provide for this arrangement. Unless these documents accompany the thesis, it will not be accepted.

Abstracts are bound into volumes which are filed for reference in the University Library and in the Thesis Office.

Resubmission

If a thesis is failed it cannot be submitted again in revised form without the permission of Faculty Council. A fee of $75.00 is required for the resubmission of a Master's thesis and $100.00 for a Doctoral thesis. These fees partially cover the cost to the

University of having the thesis re-examined. More details about resubmission procedures are contained in the *Guidelines for the disposition of Examiner's Reports.*

3 LIBRARIES

All resident graduate students have access to the main collection, the McLennan Library, containing over 860,000 volumes. The building also houses a number of special collections, such as the Blacker Library of Zoology and the Blackader-Lauterman Library of Architecture and Art. Libraries of the Engineering, Law and Religious Studies Faculties are housed in their respective buildings. The Medical Library, located in the McIntyre Medical Sciences Building, includes much of the material for the medical sciences, and a separate room contains the Osler Library which is devoted principally to medical history. There are special libraries such as Macdonald College Library, Islamic Institute Library, and Libraries of the schools of Library Science, Social Work, Nursing and Management. The Allan Memorial Institute and the Montreal Neurological Institute both have associate libraries. A number of departments maintain special libraries. The most extensive are in Chemistry, Geology, and Physics grouped together in the Physical Sciences Centre, and in Biology located in the Stewart Biological Sciences Building.

All university collections may be consulted by resident graduate students, though the hours for reading and the conditions under which books may be consulted or borrowed are not the same in all cases.

4 RESEARCH POLICY, PATENTS, FELLOWS, ASSOCIATES

RESEARCH POLICY STATEMENT

General

Research in the University is relevant for the general benefit of man, as well as for a host of specific purposes. We are convinced that research flouirishes only in a climate of liberty. Since the conditions for good research in our many disciplines are quite different, we have eschewed detailed regulations or attempts to cover all eventualities with blanket rules. Instead, individual investigators must to a large extent assume direct responsibility for the intellectual and ethical quality of their work.

The Vice-Principal (Research), acting on behalf of the Principal, has an overriding responsibility, but it is recognized that he is not in a position to examine applications, study progress reports, and monitor research activity, in sufficient detail to be able to detect any possible departure from acceptable standards in the work of our colleagues. Even if elaborate and expensive means could be found to enable administrative officers to exercise such detailed surveillance, it would be foolish to engage in such practice. In a community of responsible scholars, guidance is appropriate; censure may be appropriate after the event; but the detailed investigation of colleagues' intentions is not.

Much research, sponsored through contracts or otherwise, has some orientation to a mission, with the consequence that the sponsor may have priority interests in the result and may wish to impose restrictions either on the use of the data or the results, or both. Some of the restrictions asked for may be reasonable, but some are not.

It is the purpose of this document to establish some guidelines for all in the University, staff and students, in the pursuit of their research. A particular purpose is to protect research workers against committing themselves to unreasonable restrictions and to other conditions which may run counter to our accepted notions of the integrity of university research.

A serious social responsibility rests on the individual members of the community who are best equipped through special knowledge to remain aware of the consequences of research activity, and the possibility of malign application must be balanced by them against potential benefits.

"Defence contracts"

The University does not allow its professors, students or facilities to be engaged in secret military research sponsored by civilian or military agencies. There is but one exception to this restriction. We are prepared, in principle, to consider applications for the prosecution of research concerned with the defence of Canada and sponsored by Canadian agencies. If such a project is brought forward, and when the Vice-Principal (Research) is satisfied that it is Canadian and defensive in character, he will refer it to the Executive Committee, and if the Executive Committee approves, the application will be allowed to stand. If the project is then initiated, the Vice-Principal and the Executive Committee will report its existence to Faculty Council, though restricted details will not be divulged at that time.

Official secrecy based on constitutional or public policy grounds

Certain kinds of research data in the custody of governments and other agencies are covered by restrictions to protect the privacy of individuals or business firms. These restrictions may make it necessary to limit the use or publication of data to com-

ply with law or policy on confidential personal data. There may also be constitutional restrictions on the disclosure of findings, until they have been made public in the proper manner, through tabling in Parliament for example. Similarly, research done for commissions or committees of inquiry may be protected from premature disclosure.

If the restriction is not such as to prevent the eventual use of the material by students or staff researchers for thesis use or publication, these restrictions are not unreasonable, though the question of the time limits is subject to clearly defined university policy described below. If the research cannot be freely used by students, it is not, generally speaking, appropriate for thesis research.

We will not accept unqualified secrecy rules; nor will we accept requests for delays in publication in excess of one year, though the Executive Committee has the right to accede to requests to three years in exceptional cases.

Commercial contracts

In some kinds of work, at least limited commercial security is necessary to protect commercial application by the sponsor. Since in many areas we should not turn down all involvements with commercial sponsors, careful distinctions become necessary. Those contracts in which all or a major portion of the activity is concerned with the application of available knowledge to the solution of a problem, fall under the guidelines of the next section (5). In those contracts which are predominantly concerned with fundamental research, we refuse contracts with unconditional secrecy clauses, but accept contracts where we obtain agreement regarding at least the following elements:

(a) the interests of students involved, especially with respect to the examination of their theses, must not be jeopardized;
(b) the investigators' rights to publish the non-commercial aspects of the work must not be restricted;
(c) where the commercial aspects of the work are intimately intertwined with the basic findings, only limited periods of delay in the right to publication can be accepted.

Consulting

Consulting may often be an academically worthwhile pursuit, particularly in professional faculties. Society often requires assistance which only the university has the expertise to provide. The professor should select his consulting work so that it enhances his research and teaching activities. The collection of information and perhaps some measure of control may be necessary by the professor's academic supervisor who should request information annually from the professor concerning the nature of his consulting work, the amount of time spent and money earned.

There are several types of consulting, but for the purposes of research policy, only those types need be considered which involve the employment of students, the use of University facilities or are undertaken within a contract to which the University is party. When graduate students are used, graduate Faculty is involved. If the student is employed on routine work separate from his academic program, the amount of time spent and money earned is of concern. If the work is an integral part of his academic program, the student must be given adequate freedom to pursue a worthwhile piece of research and, at the same time, the work performed must be a product of the student's own efforts and not those of his colleagues. The University is opposed to students deriving their basic financial support from the private consulting contracts of faculty members. If University facilities are used, then the University should be apprised through the academic supervisor, and recompensed for the use of these facilities.

The University endeavours to obtain, in contracts for consulting, freedom to publish the academically interesting aspects of the work within a definite time limitation which is usually two years. The University should only agree to assign patent rights arising specifically out of work done for the sponsor and then only when the sponsor undertakes to complete the application for the patent within, say, two years. Professors should also endeavour in their private consulting agreements to follow the same guidelines.

The delay of publication

Occasions arise where delays to the publication of the results of research may be justified. Instances of this, and the procedures to be followed, have already been mentioned. In connection with theses submitted by graduate students, circulation of the thesis through the University library or the National Archives may be stopped at the student's request for a period up to one year, if a patent application is pending, or if the premature disclosure is otherwise likely to jeopardize subsequent research; in such cases, the Executive Committee of the Faculty reviews the request and, if it approves, subsequently reports it to Faculty Council.

Procedures to obtain research support

When a member of the University staff wishes to undertake research involving the use of the University's facilities, or when the funds are to be used to support activities in which students or post-doctoral fellows are to be engaged as part of their educational experience, the University considers the activity to be part of its pattern of research and the following procedures apply:

All applications to external agencies for support of University research must, in the first place, be submitted to the chairman of the applicant's department for endorsement. In some faculties,

the Dean's signature is also to be solicited, in others not; applicants should inform themselves on this point. Applications are then to be routed to either the Research Grants Office or the Research Contracts Office for review and signature by the Vice-Principal (Research).

If an award is subsequently made, it will be made to the University to administer. An account will be opened by the Special Funds Accountant for the investigator to draw upon. All such funds will be accounted for as part of the University's research income and will be reported by the Chief Accountant in the normal way.

(The above is an abbreviation of "Elements of a Research Policy for McGill University". Copies of the complete document are available in the Faculty's Research Grants and Research Contracts Offices.)

GUIDELINES FOR NON-MEDICAL RESEARCH WITH HUMAN SUBJECTS

The University should insure that the welfare of human subjects who participate in research carried out by professors, students, and staff be safeguarded. This responsibility is complemented by our obligation to respect the law as it applies to privacy and human rights. Award-granting agencies require that the University protect subjects participating in funded research; ethical and possibly legal considerations require that we supervise all other research in this area as well.

Professional associations and learned societies have established ethical principles for research with human subjects. These standards specify the rights and the treatment which research subjects may expect. They deal with topics like privacy, the confidentiality of research information, the right of subjects to information about experimental procedures, the use of control groups, respect for subjects' psychological well-being, and respect for social stability.*

The conscience of each investigator in applying these principles is the single most important protection for the welfare of human subjects. But the university, which also has a responsibility for their welfare, must assure that each investigator's ethical decisions have been confirmed or modified by the informed and dispassionate advice of peers who are not directly involved in the research.

* For Example:

Ethical Principles in the Conduct of Research with Human Participants American Psychological Association. (Under consideration for adoption by the Canadian Psychological Association.)

Professional Ethics: Statement and Procedures of the American Anthropological Association

The following committees and tasks are proposed as the means of exercising the University's responsibility. Since the Faculty of Medicine has already established a comprehensive research review procedure, this proposal is limited to the review of non-medical research.

a) *Graduate Faculty Committee on Ethical Principles*

A committee consisting of a chairman and four members chosen to represent, as widely as possible, the community involved in biosocial research. The purposes of this committee are:

i. to assert the University's concern with adherence to ethical standards in the conduct of all research;
ii. to receive recommendations from the local committees on their decisions on particular research projects;
iii. to review current and previous practice and recommend changes;
iv. to arbitrate, when requested by local committees, when a decision cannot be made about a particular research.

b) *Faculty and Departmental Committees on Ethical Principles*

These are *ad hoc* local committees convened for specific research projects by the department chairman, or, where the Faculty is recognized as an academic unit (as for example in Education), by the Dean. While it is the researcher's responsibility to request the formation of a review committee, it is the chairman's or dean's right to establish a committee on his own initiative, to review research in his jurisdiction. Each committee should consist of five people, at least one of whom should come from outside the department or faculty concerned. The chairman is the departmental chairman, or, where appropriate, the dean, or their nominees.

Each committee will:

i. acquaint itself with the details of the proposed research;
ii. ensure that the research conforms to acceptable ethical standards;
iii. issue a certificate to the effect that the proposed research has been evaluated and conforms to acceptable ethical standards;
iv. submit to the Graduate Faculty Committee on Ethical Principles a copy of the certificate of approval, referred to in iii above;
v. in case of difficulty, seek the advice of the Graduate Faculty Committee on Ethical Principles.

PATENTS

University Patent Policy

Principles and Objectives

The University recognizes as a fundamental principle that it should maintain complete freedom of research and the unrestricted dissemination of information. Research done solely in anticipation of profit is incompatible with the aims of the University. Nevertheless, it is recognized that in the course of its research activities, ideas or processes may be developed on which, in the public interest, patents should be sought. The University and the inventor have a responsibility to promote the effective development and utilization of such discoveries, and to insure that they will not be restricted in their use in a way which is detrimental to the public interest.

It is also recognized that the effective development of patents based on their research activities have occasionally provided Universities with revenues which have made possible the encouragement of further research both in the field in which the patent was developed and in the University as a whole.

Rights of the University, the Inventor, and Supporting Agencies

(1) The University affirms its interest in all patentable discoveries or inventions of members of its academic, technical or administrative staff, or by students registered in its Faculties, or by other personnel engaged in its teaching or investigative programs, which are made in the course of the performance of their duties within or without the University, or which are made possible by a measure of University support.

(2) The University affirms that it will provide recognition to inventors through a share in the proceeds from their inventions in the following ways:

i) The inventor and his academic associates will profit indirectly, through the allotment by the University of at least a portion of its income from the invention to their research programs.

ii) A modest fraction of the profit should be given to the inventor himself, in order to encourage him to bring his invention to the patentable stage and to patent it under the auspices of the University, and to provide him with a measure of direct reward that does not depend upon his continuing employment at the University.

iii) The desires of the inventor with respect to the use of any surplus of revenues derived from his patents will be considered.

(3) The University affirms the principle that revenues from patentable inventions should normally be devoted to the further support of research.

(4) Under the terms of certain contracts and agreements undertaken by the University on behalf of members of the University with various agencies of government or other supporting bodies, the University and the grantee may be required to assign patent rights to the granting or contracting agency. The University recognizes the equity of outside sponsors of research with respect to patentable discoveries made under such grants, and retains the right to enter into such agreements when they do not conflict with its basic objectives.

(5) Notwithstanding the above, the University does not consider that it has an interest in the exploitation of the work of members of the University undertaken in their capacity as consultants to outside bodies, nor in cases in which the invention results from the demonstrably private research of the University member.

(6) The University affirms that nothing in this policy statement has reference to revenue derived from royalties from copyrights on work which has been published.

(7) Acceptance of this policy is a condition of employment by the University, and of registration as a student, and of being accepted in any capacity in any University controlled laboratory or program, and it is understood that no member of the University will enter into any patent negotiations without informing the University by writing to the Dean of Graduate Studies and Research that he/she is doing so.

(8) Procedures for implementing this Policy are deposited with the Secretary of the Board of Governors and the Dean of the Faculty of Graduate Studies and Research, from whom copies may be obtained. Representations relating to this Policy and its implementation should be made to the Dean for the consideration of the University Patents Committee.

University Patent Procedures

a) The evaluation and development of inventions and discoveries involves time, expense and specialized knowledge which the University cannot normally provide. It will therefore enter into non-exclusive agreements with outside bodies which provide these services, when the aims of these bodies are consistent with the University's objectives. In particular, such agreements will be negotiated with non-profit organizations specialized in this field such as Canadian Patents and Development Limited in Ottawa, and the Research Corporation in New York City.

b) A Patents Committee exists to implement the University's Patent Policy, as set out in the Statutes, to advise personnel on procedure for dealing with patent matters.

and to act as the University's agent in dealing with those bodies with which it has contracted for the exploitation of patents. The Committee consists of a chairman appointed by the Principal from the academic staff of the University, the Dean of the Faculty of Graduate Studies and Research or someone delegated by him to represent that Faculty, a member designated by the Board of Governors, and one other faculty member selected by the Executive Committee of the Graduate Faculty. The member designated by the Board of Governors is a member *ex officio* and the University Research Grants Officer acts as non-voting Secretary to the Committee. The inventor or a representative chosen by him, and the Dean of his Faculty, are also non-voting members of the Committee when it is considering a particular invention.

c) The University member shall notify the Dean of the Faculty of Graduate Studies and Research and through him the Patents Committee of any inventions or discoveries made by him in the course of his university duties which seem to him to be of a patentable nature. He shall, when required, submit to the Patents Committee all information needed for the evaluation of the discovery and the application for patent rights, and give the University permission to disclose that information, under such safeguards as the Patents Committee may determine, to other qualified and interested persons.

d) The Patents Committee shall decide whether or not to submit any given invention or discoveries to one of the agencies representing the patent interests of the University. If no action is taken on the part of the University within a period of six months, or such lesser period as the inventor may show is necessary to protect his rights, full title to the invention and to any revenue which may be subsequently derived from it will revert to the inventor who may proceed on his own account if he so desires.

e) In those cases in which the agency (such as Canadian Patents Development Limited or Research Corporation) to which the University, on the recommendation of its Patents Committee, has submitted an invention for development, decides that it does not wish to proceed with a patent application, the Committee may in consultation with the inventor, consult other technical experts for advice, to decide whether to recommend that the University undertake the patent application on its own initiative.

f) A faculty member, student or other person to whom these procedures may apply, shall have the right to appeal to the Principal decisions of the Patents Committee which he considers unjust. In the instance where the matter at issue is whether the University has interest in the invention, the faculty member, student or other person shall accept the findings of an arbitrator acceptable to, and appointed by himself and the university, the cost of such arbitration being shared equally by the two parties to the arbitration. In the event that the University and the inventor fail to agree upon an arbitrator, within thirty days of a formal invitation to do so, either party may request the appointment of an arbitrator from the President of the Montreal Board of Trade who shall appoint the arbitrator forthwith.

g) The University's agreements with the corporations charged with developing its patents will follow the normal pattern of agreements made between these corporations and universities. The inventor or inventors shall normally receive 15% of the gross proceeds of the invention; the remainder, will be divided between the University and the Corporations in accordance with the terms of the agreements. In the case in which there is more than one inventor, the distribution of the inventors' share shall be made on the recommendation of the co-inventors or, in the absence of such a recommendation, by the Patents Committee. The University's share shall normally be devoted to the support of research, special recognition being given to the laboratory, department or faculty in which the discovery was made. In general, at least one-half of the University's share shall be so allocated, provided that such a distribution is consistent with general University budgetary policies. The proportion may, however, vary with the magnitude of the benefit derived from the patent.

h) If an invention that appears to be patentable is made by a student registered in the University and using University facilities, he shall in consultation with his Director or the Chairman of his department submit it to the Patents Committee for consideration. His submission will then be dealt with in the same way as applications by staff members.

POST-DOCTORAL FELLOWS

Post-doctoral fellows are junior Ph.D. graduates engaged by a member of the University's academic staff to assist him in his research. Medical post-doctoral fellows possess the M.D. degree. Post-doctoral fellows may register with the Faculty through the Dean's Office (or in the case of medical post-doctoral fellows, through the Office of the Dean of Medicine) and receive thereby a university identity card, library and other staff privileges. They

become liable to the provisions of the Health Insurance Plan.

RESEARCH ASSOCIATES

This title is intended to provide recognition and status on the University records for senior investigators who are neither candidates for a degree nor members of the regular teaching staff of McGill University, but are attached temporarily to a department because their assistance is required in the interests of a current program of research.

A Research Associate will normally hold the Ph.D. degree or an equivalent qualification.

Any grant which a Research Associate may receive must be either from McGill University or from some other institution promoting the advancement of learning, and must be paid solely for the furtherance of the research that he is pursuing and not for instruction or demonstration. A Research Associate may, however, with the permission of the Faculty, act as a director of research for graduate students associated with him.

OFFICE OF INDUSTRIAL RESEARCH

The Office of Industrial Research, an organization supported by the Federal Government, exists to promote interactions and to negotiate research contracts between industry and the University.

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DEPARTMENTS OF STUDY (Sectional Indices)

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Biology A6
Chemistry (Agricultural) A1
Engineering (Agricultural) A2
Entomology A7
Horticulture A8
Microbiology A9
Parasitology A10
Physics (Agricultural) A3
Plant Pathology A11
Renewable Resources A12

BIOLOGICAL SCIENCES — SECTION "B"

Bellairs Research Institute B1
Biochemistry B2
Biology B3
Entomology (See Section "A") A7
Marine Sciences B4
Microbiology and Immunology B5
Microbiology (Macdonald College) (See Section "A") A9
Parasitology (See Section "A") A10
Physiology B6
Psychology B7
Wildlife Biology B8

HUMANITIES — SECTION "C"

Art History C1
Classics C2
Communications C3
English C3
French C4
German C5
Greek C2
Hispanic Studies C6
Islamic Studies C7
Italian C8
Latin C2
Linguistics C9
Music C10
Philosophy C11
Religious Studies C12
Russian and Slavic Studies C13

MEDICAL AND ALLIED SCIENCES — SECTION "D"

Anatomy D1
Audiology D6
Biochemistry D2
Biochemical Engineering D3
Dentistry D4
Epidemiology and Health D5

Human Communication Disorders D6
Medicine, Experimental D7
Microbiology and Immunology D8
Neurology and Neurosurgery D9
Otolaryngology D10
Parasitology (See Section "A") A10
Pathology D11
Pharmacology and Therapeutics D12
Physical and Occupational Therapy D13
Physiology D14
Psychiatry D15
Radiology D16
Surgery, Experimental D17

PHYSICAL SCIENCES AND ENGINEERING — SECTION "E"

Architecture E1
Biomedical Engineering E2
Chemical Engineering E3
Chemistry E4
Civil Engineering E5
Computer Science, School E6
Crystallography E7
Electrical Communications (See Elect. Eng.) E8
Electrical Engineering E8
Geography E9
Geological Sciences E10
Geophysics, Applied (See under Mining Eng.) E15
Glaciology (See under Geography) E9
Marine Sciences (See also Section "B") E11
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Comparative Law F7
Developing-Area Studies F2
Economics F3
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Geography F5
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International Relations F8
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Political Science F8
Psychology F9
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EDUCATION — SECTION "G"
LIBRARY SCIENCE — SECTION "H"
MANAGEMENT — SECTION "I"

Macdonald College

Faculty of
Graduate Studies and Research
1976 — 77

Section "A"

Agricultural and Allied Sciences

NOTE: Courses marked with an asterisk (*) are not offered in 1976-77. The letters, which form part of course numbers, have the following significance:
A — Fall term course
B — Winter term course
L — Summer session part I course
C — Summer session part II course
D — Full session course (Fall and Winter terms)

The official McGill University mailing address is:
McGill University, P.O. Box 6070, Station A
Montreal, Quebec, Canada H3C 3G1

Legal Deposit II 76

A1 DEPARTMENT OF AGRICULTURAL CHEMISTRY

The Department has laboratory and library facilities for research leading to the degrees of Master of Science and Doctor of Philosophy in Agricultural Chemistry.

Current research projects are in the areas of biochemistry, food chemistry and environmental pollution.

STAFF

Professors — B.E. BAKER *(Chairman)*; P.A. ANASTASSIADIS
Professor Emeritus — R.H COMMON
Associate Professor — G.O. HENNEBERRY
Assistant Professors — T. BEVERIDGE; H.J. HUECKEL

REQUIREMENTS

REQUIREMENTS FOR THE M.Sc. DEGREE

(1) Candidates are required to have the B.Sc. (Agr.) degree with honours standing or an equivalent qualification. Students holding a B.Sc. degree may be accepted if they have appropriate undergraduate work in chemistry with sufficient biology; otherwise a qualifying year will be required.

(2) Candidates for the M.Sc. degree are required to take the examinations in two courses for higher degrees given in the Department.

(3) Candidates may be required to take the examination in one of the cognate courses listed below.

Either Statistical Methods II (Department of Agricultural Physics 360-610A,B) *or* Isotopic Tracer Techniques (Department of Agricultural Physics 338-602B) *or* Advanced Animal Biochemistry (Department of Animal Science 342-650D) *or* Reproductive Physiology (Department of Animal Science 342-422B) *or* Digital Computing (Mathematics 360-203A).

(4) Candidates are required to complete an acceptable research project and to submit an acceptable thesis on their research.

REQUIREMENTS FOR THE Ph.D. DEGREE

Candidates will be judged principally by their ability in research. Course work will be arranged with other departments at Macdonald College to meet individual needs. Special arrangements for course work may be made with the McGil Departments of Chemistry, Biochemistry and Experimental Medicine. Candidates should normally be prepared to take the Comprehensive Preliminary Examination by the end of the first year in which they are candidates for the Ph.D. degree. Candidates are required to pass an examination in Technical French (354-300A,B). Candidates *may* be required to pass a similar examination in a second language.

COURSES FOR HIGHER DEGREES

332-651A FOOD ANALYSIS I. (2 lectures and one laboratory period.) Proximate analysis. Chemical examinations of sugars, starches, cereals, oil seeds, fat and fat products, fruits, dairy and meat products. Vitamins, food colours, flavours. Contaminants. Physiochemical methods used in food analysis.
Professor Anastassiadis

332-652B FOOD ANALYSIS II. (2 lectures and one laboratory period). A specialized course on the principal analytical techniques used for analysis of carbohydrate, lipid, protein and vitamin constituents of foods and feedstuffs, and for detection and determination of chemical additives and contaminants.
Professor Beveridge

332-663B INDUSTRIAL UTILIZATION OF FARM PRODUCTS. (2 lectures, second term). The composition and structure of food systems including meat, milk, wheat and vegetable oils; the chemistry involved in certain industrial processes that utilize these farm products.
Professors Baker and Anastassiadis

332-664D GRADUATE SEMINAR. (1 hour).
Professor Baker and Staff

332-700D COMPREHENSIVE PRELIMINARY EXAMINATION. (See paragraph 23 of Faculty Regulations).
Staff

A2 DEPARTMENT OF AGRICULTURAL ENGINEERING

The Department offers facilities for research work in the areas of water control, agricultural structures, plant and animal environment, engineering properties of agricultural products, agricultural waste management, agricultural machinery and food engineering leading to the degrees of Master of Science and Doctor of Philosophy.

Candidates for M.Sc. and Ph.D. degrees should indicate in some detail their fields of special interest when making application for admission.

STAFF

Professor — R.S. BROUGHTON
Associate Professors — J.R. OGILVIE *(Chairman)*; E. McKYES

Assistant Professors — E.R. NORRIS; R. KOK
Research Associates — R. MURPHY; S. NEGI; V. RAGHAVAN

REQUIREMENTS

LANGUAGE REQUIREMENTS

Fluency in one of the official Canadian languages and a reading ability in the other is a requirement for an advanced degree. This requirement will be waived for non-Canadian students who can demonstrate a fluency in one of the official Canadian languages and a reading ability in any other language in which there is significant literature in their field of research. The two official languages in Canada are English and French. Suitable courses are available on both campuses.

REQUIREMENTS FOR THE M.Sc. DEGREE

The program for candidates for the M.Sc. degree will be developed in consultation with the candidate's research director and will normally include a minimum of eight term courses plus a thesis submitted in accordance with the rules of the Faculty. Courses will be selected from those offered in the Agricultural Engineering Department and those in such other departments as Agronomy, Animal Science, Civil Engineering, Mathematics, Mechanical Engineering, Renewable Resources and Economics.

REQUIREMENTS FOR THE Ph.D. DEGREE

(1) Candidates for the Ph.D. degree will normally register for the M.Sc. degree in the first instance. In cases where the research work is proceeding very satisfactorily, or where the equivalent of the M.Sc. degree has been completed at another university, candidates may be permitted to proceed directly to the Ph.D. degree.

(2) Courses of study selected for a Ph.D. program will depend on the existing academic qualifications of the candidate and on those needed for effective prosecution of research. Candidates are encouraged to undertake an additional course of study of their own choice in some field of the humanities, sciences or engineering not directly related to their research. The program will be established by consultation of the candidate with a committee that will include his research director and at least one other professor. Normally from six to twelve term courses will be required beyond the M.Sc. degree.

(3) Students who take their B.Sc. and M.Sc. at McGill University may be required to spend one session in study at another university.

(4) A comprehensive examination, Agricultural Engineering 336-701D, will be taken either late in the Ph.D. 2, or early in the Ph.D. 3 registration year, to qualify to proceed to the completion of the Ph.D. degree.

COURSES FOR HIGHER DEGREES

336-511B AGRICULTURAL AND EARTHMOVING POWER MACHINERY. (2 lectures and 2 hours laboratory, odd-numbered years). An advanced treatment of off-road vehicle design. Topics include performance characteristics, internal combustion engines, analysis of power transmission devices, distribution of stresses between wheeled or tracked vehicles and soil, mobility and pull efficiency, soil cutting, earthmoving, plowing, ripping and transport, wheel and track, steering geometries, vehicle morphology.
Professor McKyes

336-602A ENVIRONMENT CONTROL IN AGRICULTURAL STRUCTURES. (3 lectures, 2 hour laboratory). A study of the environmental effects of housing on stored crops and animals. The production, maintenance, and control of the environment. The effects of the interior environment on structural components.
Professor Ogilvie

336-603D GRADUATE SEMINAR. (1 hour).
Professor Ogilvie and Staff

* **336-604B RESEARCH INSTRUMENTATION.** (2 lectures, 2 hour laboratory, odd numbered years). A systematic study of the underlying physical principles and operation of the sensing devices, amplifiers and recorders used in research.
Professor Norris

* **336-605B FUNCTIONAL ANALYSIS OF AGRICULTURAL MACHINES.** (2 lectures, odd numbered years). Theoretical analysis of unit operations to be performed by various tillage and harvesting machines. These analyses will consider the physical and biological properties of the materials affected by the machines.
Professor Norris

* **336-606A LAND DRAINAGE ENGINEERING.** (3 lectures, odd-numbered years). Land drainage in relation to soils and crops. Design of regional drainage systems, stability of ditches, ice problems. Design of subsurface drainage systems. Theories of flow into drain tubes. Hydraulics of wells. Drainage of irrigated lands. Water table control.
Professor Broughton

336-607B ENGINEERING ASPECTS OF PLANT ENVIRONMENT. (3 lectures, even-numbered years). The energy budget of the earth's surface. Laminar and turbulent flow in the air layer near plant-covered ground. Evaporation and transpiration. Artificial protection against advection and radiation frosts. The use of artificial means to improve the environment of plants. Control of environment in plant growth structures.

336-608A,B SPECIAL PROBLEMS IN AGRICULTURAL ENGINEERING. (2 conferences, either term). Laboratory, field and library studies and

reports on special problems related to Agricultural Engineering that are not covered in the regular course work.
Professor Norris and Staff

336-609A HYDROLOGY. (2 lectures, even-numbered years). A fundamental course in Hydrology. Topics covered include: the inter-relationships between precipitation, interception, infiltration, evapo-transpiration, and surface runoff; analysis of precipitation and streamflow data; use of hydrographs; hydraulics of groundwater and wells; used and replenishment of groundwater; evaporation and transpiration; irrigation water requirements.
Professor Broughton

336-610D TECHNOLOGY OF FERMENTED FOOD PRODUCTION. (3 lectures, offered in alternate years, given in 1976-77). Engineering aspects such as heat generation and transfer, fermentation vessel design, scale up and control instrumentation are considered as well as specific processes. Microbiological topics include artificial mutant induction, laboratory culture maintenance and phage contamination and control.
Professors Kok and Idziak

336-701D COMPREHENSIVE EXAMINATION IN AGRICULTURAL ENGINEERING.
Staff

A3 DEPARTMENT OF AGRICULTURAL PHYSICS

STAFF

Professor R.H. DOUGLAS *(Chairman)*
Associate Professors — N.N. BARTHAKUR; P. SCHUEPP
Assistant Professor — M.A. FANOUS
Professor Emeritus — W. ROWLES

COURSES FOR HIGHER DEGREES

The courses below may form part of the required courses for graduate students in Physics, or may be taken by students in other departments as a cognate subject.

338-602B ISOTOPIC TRACER TECHNIQUES. (2 lectures and 1 four-hour laboratory, second term; Prerequisite: 338-303A or equivalent). An advanced practical course designed to introduce qualified students to laboratory equipment and techniques required for tracer experiments. The theory and use of end-window and windowless G.M. counters, proportional counters, scintillation counters both solid and liquid types, and a Nier type mass spectrometer will be studied.
Professor Barthakur

360-610A,B STATISTICAL METHODS II. (3 hours lectures and 2 hours laboratory; Prerequisite: 360-201A or equivalent). Multiple, curvilinear and stepwise regression; partial and multiple linear correlation; simple analysis of covariance; cross and nested classifications; analysis of variance of disproportionate data: split-plot techniques; orthogonal comparisons; transformations.
Professor Fanous

360-612B MATHEMATICAL METHODS: (3 hours lectures; Prerequisite: 360-205B, Differential Equations, or equivalent). Partial differential equations and boundary-value problems; Fourier analysis and series solutions; Laplace Transforms; numerical methods; special topics.
Professors Schuepp and Kok

360-613B TECHNIQUES OF STATISTICAL ANALYSIS. (3 hours lectures; Prerequisite: 360-610A or equivalent). Non-parametric methods; multiple analysis of covariance; multivariate methods; sensitivity testing.
Professor Fanous

A4 DEPARTMENT OF AGRONOMY

The research program of the department is concerned with most phases of agronomic investigations, with particular emphasis on problems in plant breeding, crop physiology and weed biology.

STAFF

Professors — H.R. KLINCK; H.A. STEPPLER *(Chairman)*
Associate Professor — N.C. LAWSON
Assistant Professors — G. GENDRON, A.K. WATSON

REQUIREMENTS

In addition to *The General Regulations* of the Faculty of Graduate Studies, the Agronomy Department has the following requirements:

REQUIREMENTS FOR THE M.Sc. DEGREE

(1) Candidates are required to have the B.Sc. (Agr.) degree with high standing, or an equivalent qualification, with sufficient basic training in the courses chosen for the higher degree. Students who lack such training must take the required courses of the undergraduate years, as well as courses in such other topics as the department may require.
(2) Students will be required to take courses 340-604D and 340-609D in each year of

resident study, and courses 340-607C, 340-610B, and at least one other course of those listed. In addition, they may be required to take courses in cognate subjects.

(3) Since the research problems generally involve field experimentation, students will require at least 18 months and more frequently two years to complete the research and hence the requirements for the degree.

REQUIREMENTS FOR THE Ph.D. DEGREE

(1) Candidates must have an M.Sc. degree with specialization in Agronomy and a high standing achieved in both course work and thesis.

(2) Students will be judged primarily by their ability to conduct research.

(3) Students will be required to take course 340-701D. Courses 340-604D and 304-609D will be taken in each year of resident study. Students may also be directed to take such other courses in Agronomy or cognate subjects as the department requires. Students who take their M.Sc. at McGill may be required to spend one session in study at another University (see paragraph 19c of Faculty Regulations).

COURSES FOR HIGHER DEGREES

340-604D SEMINAR. (1 hour). Weekly meetings; each student will present at least one seminar each term. All students must register for this course each year.
Staff

340-605B FORAGE CROP EXPERIMENTATION. (2 lectures). The conduct of forage experiments and methods of estimating parameters; current literature used as basis for discussion.
Professor Steppler

340-606D PLANT BREEDING. (3 lectures). A directed reading and discussion course on plant reproduction, systems of mating, genetics and cytology as applied to the improvement of existing cutlivars of plants and the development of new ones.
Professor Lawson

340-607C METHODS OF AGRONOMIC RESEARCH. (3 hours, May to September). A summer course to acquaint the student with the techniques of agronomic research in use in the experimental fields.
Professor Steppler and Staff

340-608D SPECIAL TOPICS. (3 lectures). Prescribed reading, conference and practical work on selected topics within agronomy.
Staff

340-609D ADVANCES IN AGRONOMY. (1 lecture). One-hour discussions by students and staff on technical topics of current interest in agronomy. The organization of agronomic research and agronomic groups will be considered.
Professor Steppler and Staff

340-610B DESIGN OF EXPERIMENTS. (3 lectures; Prerequisite: Math. 360-610A or equivalent). The design and analysis of experiments, with particular reference to agricultural research; factorials, incomplete block and lattice designs.
Professor Steppler

340-612B BIOLOGICAL CONTROL OF UNDESIRABLE VEGETATION. (3 hours: 2 lectures, 1 conference). Directed reading and discussion on the use of plant-feeding organisms and disease to reduce the density of undesirable vegetation in favour of more useful plant species. (Alternate years — will be offered in 1976-77).
Professor Watson

340-613B BIOCHEMISTRY AND PHYSIOLOGY OF HERBICIDES. (3 lectures). Mechanisms of penetration, translocation, selectivity and modes of action of herbicides and their interactions with the environment. (Alternate years — not offered in 1976-77).
Professor Watson

340-701D COMPREHENSIVE EXAMINATION IN AGRONOMY. (See paragraph 24 of Faculty Regulations).
Staff

NOTE: A lecture may be replaced by a laboratory period of at least two hours.

A5 DEPARTMENT OF ANIMAL SCIENCE

The department provides laboratory and library facilities for research work leading to the degrees of Master of Science and Doctor of Philosophy in each of the following disciplines:

Animal Genetics
Animal Physiology
Nutrition

STAFF

Professors — S. TOUCHBURN *(Chairman) (Nutrition)*; E. DONEFER *(Nutrition)*
Associate Professors — R.D. BAKER *(Physiology)*; R.B. BUCKLAND *(Animal Genetics and Physiology)*; F.A. FARMER *(Nutrition)*; J.E. MOXLEY *(Animal Genetics)*

Assistant Professors — T. HARTSOCK *(Nutrition)*; H.J. HUECKEL *(Nutrition)*; B.W. KENNEDY *(Animal Genetics)*; P.C. LAGUE *(Physiology)*; *P.A. MARTIN (Physiology)*

REQUIREMENT FOR ADVANCED DEGREES

Candidates are required to have either a Bachelor's degree in Agriculture or a B.Sc. degree with specialization in biology, biochemistry or food science with honours standing or its equivalent.

UNDERGRADUATE COURSES

A candidate will be required to complete undergraduate courses in Animal Science or in the basic sciences when his background in his elected discipline is inadequate.

342-301B PRINCIPLES OF ANIMAL BREEDING.

342-311B ANIMAL PATHOLOGY.

342-323A MAMMALIAN PHYSIOLOGY.

342-422B REPRODUCTIVE PHYSIOLOGY.

342-330A FUNDAMENTALS OF NUTRITION.

342-331B FUNDAMENTALS OF HUMAN NUTRITION.

342-332B APPLIED ANIMAL NUTRITION.

342-424B METABOLIC ENDOCRINOLOGY AND GASTROINTESTINAL PHYSIOLOGY.

342-432A ADVANCED ANIMAL NUTRITION.

Candidates may be required to take one or more of the following courses on the Montreal campus:

516-602A ADVANCED ENDOCRINOLOGY — STEROID HORMONES.

516-603B ADVANCED ENDOCRINOLOGY — NITROGEN CONTAINING HORMONES.

COURSE REQUIREMENTS BY DEPARTMENT

In addition to the departmental courses indicated below, all candidates will be required to complete any cognate courses prescribed by their director of research. The completion of an acceptable thesis based upon the candidate's own research will be required.

Animal Genetics

(a) M.Sc. PROGRAM — At least two of the following courses (342-603A, 342-604A, 342-605B, 342-606B, 342-607A) plus 342-690D and at least 3 additional one-semester equivalent courses selected in consultation with director of research.

(b) Ph.D. PROGRAM — At least three of the following courses (342-603A, 342-604A, 342-605B, 342-606B, 342-607A, 342-722D) or their equivalent, plus 342-690D and 342-701D and at least 3 additional one-semester equivalent courses selected in consultation with director of research.

Animal Physiology

(a) M.Sc. PROGRAM — Courses 342-621D, 342-650D and 342-690D plus at least one additional course selected in consultation with director of research.

(b) Ph.D. PROGRAM — 342-621D, 342-650D or their equivalents and 342-690D and 342-700D and at least two additonal courses selected in consultation with director of research.

Nutrition

(a) M.Sc. PROGRAM — Courses 342-631D, 342-632D, 342-650D, 342-690D and at least one additional course selected in consultation with research director.

(b) Ph.D. PROGRAM — Required courses for M.Sc. program or their equivalent plus 342-690D, 342-700D and at least two additional courses selected in consultation with research director.

GRADUATE COURSES

* **342-603A PHYSIOLOGICAL GENETICS OF DOMESTIC ANIMALS.** (2 lectures). A consideration of biochemical and physiological variation in domestic animals as related to productive traits.
Professor Buckland

342-604A POPULATION GENETICS. (2 lectures). A consideration of the problems involved in the improvement of animals and the application of genetics in their solution.
Professor Moxley

342-605B ESTIMATION OF GENETIC PARAMETERS (2 lectures). General methods for the estimation of components of variance and co-variance are considered, with specific emphasis given to their application to heritability, repeatability and genetic correlation estimation.
Professor Kennedy

* **342-606B SELECTION INDEX AND ANIMAL IMPROVEMENT** (2 lectures). Selection index principles and their application to livestock improvement are considered, with emphasis on the estimation of genetic breeding values for single and multi-trait selection.
Professor Kennedy

342-607A LINEAR MODELS IN AGRICULTURAL RESEARCH (2 lectures). The theory and application of linear models to agricultural research is considered. Special emphasis is given to the analysis of experimental and survey data with unequal subclass numbers.
Professor Kennedy

342-621D ADVANCED PHYSIOLOGY OF ANIMALS. (2 lectures, 1 laboratory). Studies on the organization and function of animal systems, from the viewpoints of cellular and mammalian physiology. An experimental approach is used to investigate major areas of physiology such as nervous integration, circulation of body fluids, muscle contraction, intermediary metabolism, temperature regulation, and hormonal co-ordination.
Professor Baker and Staff

* **342-631D EXPERIMENTAL TECHNIQUES IN NUTRITION.** (1 lecture, 1 laboratory). A series of lectures and laboratories of nutritional experimentation and surveys. Emphasis will be placed on the design and conduct of nutrition studies, selection of experimental animals, chemical and biological assays, statistical analysis, interpretation of data and preparation of technical reports.
Nutrition Staff

342-632D ADVANCED NUTRITION. (2 lectures). A series of lectures and discussions on subjects of current interest in nutrition, with special reference to energy, amino acids, vitamins and minerals, their quantitative requirements and metabolic interrelationships.
Nutrition Staff

342-650D ADVANCED ANIMAL BIOCHEMISTRY. (2 lectures). Enzymology and biological oxidation; intermediary metabolism of carbohydrates, lipids, proteins and other compounds of nitrogen; endocrinological aspects of metabolism; metabolic roles of inorganic ions, vitamins and growth factors.
Professors Touchburn and Hueckel

342-690D SEMINAR. (1 hour).
Staff

342-691D SPECIAL PROJECTS IN ANIMAL SCIENCE. (2 hour laboratory — one term). For students who undertake a research or library project not offered in other courses.
Staff

342-701D DOCTORAL COMPREHENSIVE EXAMINATIONS. (See paragraph 24 of Faculty Regulations).

342-722D MAMMALIAN AND AVIAN GERM CELLS. (2 lectures, 1 laboratory — one term; Prerequisite: Animal Science 342-322B or equivalent). Problem-oriented investigation of the recent theories and developments on the formation, transportation, and livability of spermatozoa and ova within the body, and their metabolism and preservation *in vitro*.
Professors Baker and Buckland

342-730D COLLOQUIUM IN NUTRITION. (1 lecture; Prerequisite: Animal Science 342-632D). Discussions on recent developments in nutrition. Oral and written presentations by students will be emphasized.
Nutrition Staff

342-731D ADVANCED RUMINANT NUTRITION. (2 lectures; Prerequisites: Animal Science 342-424B and 342-650D or equivalent). A series of discussions on the organization and function of the ruminant digestive system, methods of study and factors which influence digestion.
Professors Jones and Donefer

A6 DEPARTMENT OF BIOLOGY

COURSES GIVEN AT MACDONALD COLLEGE

Several of the following courses will be offered according to demand.
(consult staff)

177-670A CYTOLOGY. (2 hours and one laboratory period). An intensive study of the cell with emphasis on the nucleus, nuclear division, chromosome morphology, chromosome aberrations, euploidy and aneuploidy, and chromosome behaviour in hybrids.
Professor W. Grant

177-671B CYTOGENETICS. A study of cytological and genetical topics at an advanced level including polyploidy, apomixis and parthenogenesis, chromosome and gene replication, sex determination, and karyotype analysis.
Professor W. Grant

177-672B MICROBIAL GENETICS. An analysis of recent progress in the genetics of microorganisms including viruses, bacteria, yeasts, paramecia, algae and fungi.
Professor W. Grant

177-673A MUTAGENESIS AND RADIATION BIOLOGY. A study of the nature of mutations and the genetic effects of radiation and chemical mutagens on plants and animals and in crop improvement.
Professor W. Grant

177-675B STATISTICAL METHODS IN GENETICS. A presentation and discussion of statistical methods of analysing genetic changes in populations of domestic animals and plants, with particular reference to pedigrees, heterosis, selection, etc.
Professor H. Tyson

A7 DEPARTMENT OF ENTOMOLOGY AND LYMAN ENTOMOLOGICAL MUSEUM AND RESEARCH LABORATORY

A liberal interpretation is put on the term Entomology. Excellent laboratory and library facilities are available for the courses listed below and for research. By an informal arrangement, part of a student's research may be done at the Biosystematics Research Institute, including the National Insect Collection, Ottawa, within reasonable distance of the Department. Students may be recommended to take undergraduate courses or courses offered by other departments of the University, either as part of their major work or as cognate subjects. All members of the graduate school are expected to take an active part in all departmental seminars and to address at least one seminar meeting per year. For those with credit in 350-695D, this may take the form of a Research Report.

The Lyman Entomological Museum and Research Laboratory, although integrated with it, is not administratively a part of the Department of Entomology, but it is academically staffed by, and all its students are registered in, that department. It provides excellent facilities for students of taxonomy.

STAFF

Professors — F.O. MORRISON; E.M. DuPORTE *(Emeritus);* D.K. McE. KEVAN *(Director, Lyman Entomological Museum and Research Laboratory);* J.E. McFARLANE; V.R. VICKERY *(Curator, Lyman Entomological Museum and Research Laboratory)*

Associate Professor — R.K. STEWART *(Chairman)*

Assistant Professors — F.E.A. ALI KHAN; S.B. HILL

Associate Members of Department — Professors E. MEEROVITCH *(Institute of Parasitology)* and J.R. BIDER *(Wildlife Biology)*

Guest Lecturers — H.F. HOWDEN; E.J. LeROUX; E.E. LINDQUIST; J.F. McALPINE and R.R.M. MASON *(Biosystematics Research Institute, Ottawa)*

REQUIREMENTS

REQUIREMENTS FOR THE M.Sc. DEGREE

Candidates for admission must have had (1) satisfactory previous training in mathematics, physical sciences and biology; and (2) have achieved a high academic standing in a Bachelor's degree in Zoology or Entomology. For students who satisfy these conditions the minimum period of study is two years. Students whose equivalent courses are deficient in Entomology may be required to take advanced undergraduate courses sufficient to ensure a good general knowledge of Entomology.

In addition to presenting a thesis the student shall take such courses and write such examinations as are deemed necessary by the Chairman of the Department in consultation with the candidate's research director. Normally this amounts to a minimum of two full graduate courses (or their equivalent) in addition to 350-695D.

The candidate will normally be expected to spend at least one summer session in full-time research on the MacDonald Campus or, under suitable direction, at some other approved institution. Preliminary studies may begin before the opening of the academic year.

REQUIREMENTS FOR THE Ph.D. DEGREE

Students who have obtained a high standing in the M.Sc. degree in Entomology or its equivalent (including the M.Sc. degree in Zoology, with a sound entomological background), may proceed to the Ph.D. degree in two additional years. Under certain circumstances students holding a Bachelor's degree of high standing may change their registration from the M.Sc. degree to the Ph.D. degree or may even register directly for the Ph.D. degree with the consent of the Chairman of the Department and the Faculty of Graduate Studies and Research. However, before these students are allowed to enter third year, they must pass an examination to determine their fitness to proceed. This will normally take the form of the comprehensive examination (350-701D) taken by all Ph.D. candidates before proceeding to a second year of residence of the Macdonald Campus. Three years of residence are required of such students.

In addition to presenting a thesis the candidate may be required to take such courses and pass such examinations as are decided upon in consultation with the Chairman of the Department and the director of his research. Normally no course work (other than a Seminar) will be required during the final year and not usually more than one full course (or its equivalent) during the preceding year for candidates already possessing an M.Sc. degree of McGill University or its equivalent. Candidates may, however, be advised or required to attend courses bearing on their research work, or to make up deficiencies, at any time during their period of resident study.

Participation in seminars will be taken into consideration in the final assessment of the candidate. Language requirements are in accordance with Faculty regulations. Two languages, other than English, will normally be required (selected from French 126-790D, German 129-790D and Russian 141-790D).

Ph.D. candidates may be permitted to spend one of their years of full-time study at an approved university or research institution other than McGill University, provided that they spend at least two academic sessions in residence at

McGill University. The candidate may be required to spend the equivalent of two summer sessions in fulltime research on the Macdonald Campus or, under suitable direction, at some other approved institution. Preliminary studies may begin before the opening of the academic year.

Candidates for M.Sc. or Ph.D. degrees should indicate in some detail their fields of special interest when making application for admission. Facilities are available for research in most branches of entomology and in related fields, but candidates with special problems should consult the Chairman of the Department in advance.

COURSES FOR HIGHER DEGREES

350-610D ADVANCED TAXONOMY AND ZOOGEOGRAPHY.
Professors Kevan and Vickery

350-625A GENERAL INSECT ECOLOGY.
Professor Stewart

350-631A SOIL FAUNA.
Professors Hill and Kevan

350-632B SOIL ECOLOGY.
Professors Hill and Kevan

350-635B AQUATIC ENTOMOLOGY.
Professor Ali Khan

350-640D ADVANCED ECONOMIC ENTOMOLOGY.
Professor Morrison

350-660A,B EARLY HISTORY OF ENTOMOLOGY. (Reading knowledge of German required).
Professor Kevan

350-695D SEMINAR AND RESEARCH REVIEW. (Two meetings weekly).
Professor Hill and Staff

350-701D Ph.D. COMPREHENSIVE EXAMINATION.
Entomology Staff and Others

350-715D ADVANCED INSECT MORPHOLOGY.
Professors Kevan, Ali-Khan and DuPorte

350-720D ADVANCED INSECT PHYSIOLOGY.
Professor McFarlane

350-726B INSECT POPULATION DYNAMICS.
Professor Stewart

350-727D GENERAL INSECT ECOLOGY AND POPULATION DYNAMICS. (includes 350-625A and 350-726B).
Professor Stewart

350-733D SOIL ZOOLOGY. (Includes 631A and 632B).
Professors Hill and Kevan

350-750A,B VETERINARY AND MEDICAL ENTOMOLOGY. (Given only irregularly by special arrangement when demand sufficient).
Professor Kevan, assisted by professors Meerovitch and Ali Khan

366-680A NEMATOLOGY.
Professor Estey

366-681B NEMATODE DISEASES OF PLANTS

374-605D WILDLIFE ECOLOGY.
Professor Bider

391-640C APPLIED PARASITOLOGY.
Professor Meerovitch

A8 DEPARTMENT OF HORTICULTURE

STAFF

Professor — JEAN DAVID
Associate Professors — C.D. TAPER *(Chairman)*; B.B. BIBLE
Sessional Lecturers — L. PERRON; S. WIGDOR

REQUIREMENTS FOR THE M.Sc. DEGREE

If the M.Sc. is taken in Fruit or Vegetable Production the candidate must take courses 358-695D and 358-610D or 358-615D, and a minimum of two full courses selected from the following: 360-610A,B (Statistical Methods II), 340-610B (Design of Experiments), 358-625A (Crop Physiology), 358-630B (Crop Physiology), 177-670A (Cytology), 177-671B (Cytogenetics), 358-620D (Fruit and Vegetable Preservation), or other courses in related subjects.

If the M Sc. is taken in Food Preservation the candidate must take courses 358-695D and 358-620D, 362-442A (Food Microbiology and Sanitation), and at least one additional course as required by the director of the candidate's research.

COURSES FOR THE M.Sc. DEGREE

Adequate laboratory and library facilities are available for the courses listed below and for research.

358-610D POMOLOGY. The biology of pomological species, and the technology of orchard and small fruit production; major aspects, significant research, recent advances.
Professor Taper

358-615D VEGETABLE CROPS. Discussion and reading assignments on the application of plant physiology and other sciences to the production of vegetable crops.
Professor Bible

358-620D FRUIT AND VEGETABLE PRESERVATION. Lectures and reading assignments on the fundamental processes and recent developments in the techniques of fruit and vegetable preservation.
Professor David

358-625A CROP PHYSIOLOGY: GROWTH AND DEVELOPMENT. A study of plant growth and development as related to the improvement of agronomic and horticultural crops, with emphasis on plant hormones, phytochrome, germination, growth, flowering, fruit development, and senescence. These topics will be reviewed in discussion sessions with each student contributing both oral and written presentations.
Professor Bible

358-630B CROP PHYSIOLOGY: PLANT PROCESSES. A study of plant metabolic phenomena as related to the improvement of agronomic and horticultural crops, with emphasis on plant mineral nutrition, translocation, water relations, photosynthesis and respiration. (Course format as stated under course 358-625A).
Professor Bible

358-635D SPECIAL TOPICS. Prescribed reading, conference and practical work on one or more selected topics within horticulture, such as research methods, plant propagation, tropical crops, storage and landscape materials.
Professor Taper and Staff

358-695D SEMINAR. Weekly meetings; each student will present at least one seminar each term. All students must register for this course each year.
Staff

A9 DEPARTMENT OF MICROBIOLOGY

Adequate laboratory and library facilities are available for courses leading to higher degrees, and for research. Candidates for the higher degree must meet the course requirements satisfactorily but are judged principally by their research ability. Normally in this Department the research problem will be on microbial physiology and bio-chemistry or on microbiological aspects of soil, food or water.

STAFF

Professors — A.C. BLACKWOOD; R. KNOWLES; R.A. MacLEOD *(Chairman);*

Associate Professors — I. W. DeVOE; E.S. IDZIAK; J.M. INGRAM
Lecturer — G. ROBERTSON
Associate Members — R. KOK *(Agricultural Engineering);* H.M. SCHULMAN *(Lady Davis Institute)* C.E. TANNER *(Parasitology)*

REQUIREMENTS

REQUIREMENTS FOR THE M.Sc. DEGREE

Candidates are required to have the B.Sc. degree in the Biological Sciences, preferably with a Major in Microbiology or its equivalent. Students with a B.Sc. degree in other disciplines or majors who lack sufficient training will be required to take either a qualifying year or undergraduate courses sufficient to ensure a good general knowledge of microbiology. Students with sufficient training and graduate level standing (B or higher) will be required to take part in Graduate Seminars as well as pass examinations in graduate courses selected in consultation with the Thesis Supervisor and the Department Chairman. The candidate must present a satisfactory thesis based on his own research.

REQUIREMENTS FOR THE Ph.D. DEGREE:

Candidates, normally, are required to have received an M.Sc. degree or its equivalent. The candidate must demonstrate a sound critical approach to and a capacity for research and must complete an original problem and present a satisfactory thesis based on his research. In addition, the candidate will be required to take examinations in courses given by this department or in cognate subjects given at Macdonald College or at the Montreal Campus and to take part in the Graduate Seminar in each year of residence. The candidate will be required to take an oral or written comprehensive examination (Course 362-701D) no later than the end of the Ph.D. 2 year. An examination in languages other than English is not required.

COURSES FOR HIGHER DEGREES

362-760D PHYSIOLOGY OF MICROORGANISMS. (2 hours, offered in alternate years, given in 1976-77). Selected topics on physiological mechanism associated with the life and growth of microbial cells; biosynthetic pathways and intermediary metabolism of carbohydrates, fats and proteins. Special emphasis is placed on the inter-regulation of these pathways.
Professor Ingram and Staff

* **362-761D SOIL MICROBIOLOGY.** (2 hours offered in alternate years, given in 1976-77). A consideration of recent advances in selected aspects of soil microbiology; autotrophs, nitrogen relationships, microfauna, soil-borne pathogens, antibiotics in soil, degradation of recalcitrant molecules, etc.
Professor Knowles

* **362-762D MICROBIAL BIOCHEMISTRY.** (2 hours offered in alternate years, not given in 1976-77). A topic course concerned principally with recent developments in the study of metabolic regulation, electron transport, energy transducing systems, the biochemistry and biosynthesis of bacterial cell wall polymers and mechanisms of membrane transport.
Professor MacLeod

362-763D INVITATION LECTURES IN MICROBIOLOGY. (1 hour). Prominent scientists, actively engaged in research will be invited to present a series of lectures in the field of their research interest. The speakers and their topics will be chosen to complement the offerings of the permanent staff.

362-764A. READING AND CONFERENCE. (2 hours, offered in alternate years, given in 1976). A course in which student presentations, taken from current literature, are concerned with various aspects of a central topic chosen for the term. Such presentations are designed to be informal and to generate student discussions. The central topic will change from term to term depending on the Staff coordinator and the students.
STAFF.

362-765B. READING AND CONFERENCE. (2 hours, offered in alternate years, given in 1977). Description as for 362-764A.
STAFF.

* **362-766A. READING AND CONFERENCE.** (2 hours, offered in alternate years, given in 1977). Description as for 362-764A.
STAFF.

* **362-767B. READING AND CONFERENCE.** (2 hours, offered in alternate years, not given in 1977). Description as for 362-764A.
STAFF.

362-769D GRADUATE SEMINAR. (1 hour). All graduate students are required to present seminars on selected topics and to prepare and discuss reports from the current literature.
Staff

362-701D COMPREHENSIVE EXAMINATION. (See paragraph 24 of Faculty Regulations).
Staff

A10 INSTITUTE OF PARASITOLOGY

The Institute has full animal, laboratory and library facilities to conduct research into all aspects of Animal Parasitology. Candidates for either the M.Sc. or the Ph.D. degree should possess an honours degree in a biological subject, or in medicine or veterinary science. Previous experience in Parasitology is less important than a sound background in experimental biology.

STAFF

Professors — NEIL A CROLL *(Director);* EUGENE MEEROVITCH; C.E. TANNER

Associate Professor — R.P. HARPUR

Assistant Professors — GAETAN M. FAUBERT; MANFRED E. RAU
Research Associate — M.M. GOIL

REQUIREMENTS

REQUIREMENTS FOR THE M.Sc. DEGREE

Candidates with insufficient background will be required to spend a qualifying year of study. Those already at an acceptable standard may proceed to 391-600D. Candidates will be required to write a full research proposal and demonstrate an understanding of research techniques, and to successfully perform in an oral examination within the first 6 months of their registration, to fulfil the requirements of 391-600D. While the emphasis is on research, evidence of satisfactory completion of 391-600D and 391-603D is compulsory before submission of the thesis together with any other course in related subjects which may be required. While in the Institute all students are required to participate in Seminar course 391-605D. A minimum of two years is needed to complete all the requirements, although in exceptional circumstances it may be one year.

REQUIREMENTS FOR THE Ph.D. DEGREE

Candidates will normally hold a Master's degree in a biological science, but in exceptional circumstances very well qualified students may proceed directly to a Ph.D. registration. Candidates will be required, as soon as they are ready, but always within 6 months, to proceed to 391-700D. For this, a full research proposal and an understanding of experimental techniques must be successfully demonstrated in an oral examination. Course 391-703D is compulsory thereafter, together with any other course in related subjects which may be required. Evidence of satisfactory completion of 391-700D and 391-703D is compulsory before submission of the thesis. While in the Institute, all students are required to participate in the (Institutional) seminars (391-605D). A minimum of three years residence is necessary to complete the requirements.

COURSES FOR HIGHER DEGREES

391-504L APPLIED PARASITOLOGY. An intensive course lasting three weeks, usually offered at the end of regular lectures in the spring. This course is also given to laboratory assistants from Provincial laboratories as part of the role of the Institute as National Reference Centre for Parasitology.
Professor Meerovitch

391-600D PRELIMINARY ORAL EXAMINATION FOR M.Sc. CANDIDATES.
Supervisor and all staff

391-603D ADVANCED PARASITOLOGY. Lectures, field work and laboratory work with assigned reading on selected topics in Parasitology and related fields.
Professor Harpur and Staff

391-605D PARASITOLOGY SEMINAR. A course of informal discussion on current problems and concepts in Parasitology and related fields. All students are required to participate throughout their time at the Institute.

391-700D PRELIMINARY ORAL EXAMINATION FOR Ph.D. CANDIDATES.
Supervisor and Staff

391-703D COMPREHENSIVE COURSE FOR Ph.D. CANDIDATES. A course of reading, essays, and tutorials, designed to fit the needs of individual candidates.
Staff

A11 DEPARTMENT OF PLANT PATHOLOGY

Laboratory, greenhouse, and library facilities are available for research leading to higher degrees. The main research interests in the department are in disease physiology, epidemiology and biology of disease, root diseases caused by fungi and nematodes, viral components produced in mixed virus infections, and history of plant pathology.

STAFF

Professors — R.H. ESTEY *(Chairman)*; R.-L. PELLETIER; W.E. SACKSTON *(On leave)*
Assistant Professors — J.F. PETERSON; M.A. VISWANATHAN; D.W. WOODLAND *(Curator McGill University Herbarium)*
Research Associate — C.H. HOGGER

REQUIREMENTS

REQUIREMENTS FOR THE M.Sc. DEGREE

Candidates are required to have honours or a high academic standing in botany, microbiology, or a related biological science, with sound training in mathematics, physics and chemistry. All candidates will be evaluated by an interview before a course program is outlined. Courses required in the candidate's program may be from the department's offerings or from other departments, and must be approved by the candidate's advisory committee.

The candidate must present a satisfactory thesis based on original research.

REQUIREMENTS FOR THE Ph.D. DEGREE

Students who have high academic standing in the M.Sc. degree program in Plant Pathology at McGill University, or its equivalent, may proceed to the Ph.D. degree. Students will be required to pass the Ph.D. preliminary examination (oral and/or written) before being admitted as a candidate for the Ph.D. degree. A program of courses must be approved by the student's advisory committee.

Candidates for the Ph.D. degree are required to have a working knowledge of English or French and a reading knowledge of the other or another language in which there is an extensive literature pertaining to their field of research.

Candidates will be examined at the completion of their studies to ensure that they have a good general knowledge of their field.

Each candidate is required to submit a satisfactory thesis based on original research and to defend it before the thesis committee.

COURSES FOR HIGHER DEGREES

* **366-602B DISEASES OF FIELD AND FOREST CROPS.**
Professor Viswanathan

366-603B DISEASES OF HORTICULTURAL CROPS.
Professor Viswanathan

366-604A PLANT PATHOLOGY RESEARCH METHODS.
Professor Pelletier and Staff

366-607B PLANT VIRUS DISEASES.
Professor Peterson

366-608E PLANT VIROLOGY METHODS.
Professor Peterson

366-610A or B. HISTORY OF PLANT PATHOLOGY.
Professor Estey

* **366-620A ADVANCED MYCOLOGY.**
Professor Estey

366-650D ADVANCED SYSTEMATIC BOTANY.
Professor Woodland

366-660D SEMINAR (one meeting weekly).
Professor Pelletier and Staff

366-680A NEMATOLOGY.
Professor Estey

366-681B NEMATODE DISEASES OF PLANTS.
Professor Estey

366-700D Ph.D. PRELIMINARY EXAMINATION.

366-701D Ph.D. COMPREHENSIVE EXAMINATION.

366-710D PRINCIPLES OF PLANT PATHOLOGY.
Professor Pelletier

* **366-730D ADVANCED PLANT PATHOLOGY.**
Professor Pelletier

A12 DEPARTMENT OF RENEWABLE RESOURCES

The Department offers research facilities for studies in Soil Science and Wildlife Biology leading to the degrees of Master of Science and Doctor of Philosophy. Studies in community resource development are possible under special arrangements.

STAFF

Professors — J.R. BIDER; H.G. DION; A.F. MacKENZIE *(Chairman);* B.P. WARKENTIN
Associate Professors — A.R.C. JONES; J.D. MacARTHUR; J.F.G. MILLETTE
Assistant Professors — G. BACHMAN; M. CHEVRIER; E. FILLMORE; J. GEROLS; R. TITMAN; M. VAN LIEROP

REQUIREMENTS

REQUIREMENTS FOR THE M.Sc. DEGREE

Candidates are required to have a Bachelor's degree with a sufficient background in the appropriate basic sciences. Students will be required to make up undergraduate courses in soils, wildlife biology or the basic sciences when their background work is considered inadequate.

The degree work will include course requirements, satisfactory performance in examinations as required by the Department, and presentation of a thesis based upon the candidate's own research work.

REQUIREMENTS FOR THE Ph.D. DEGREE

Candidates are normally required to hold an M.Sc. degree. The candidates will be judged primarily on ability to conduct an original and independent research study.

The work for the degree will include course work as required by the research problem and the candidate's background, satisfactory performance in examinations including the comprehensive examination, and satisfactory completion of research work and the thesis.

COURSES FOR HIGHER DEGREES

372-602D CHEMISTRY AND FERTILITY OF SOILS. (2 lectures per week, one term). Discussion of significant research in chemistry, movement and uptake of plant nutrients; composition and properties of soil organic matter; analytical techniques.
Professor MacKenzie

372-610D PEDOLOGY. (2 lectures per week, one term). Processes of profile development, principles of classification, comparative taxonomy, land utilization.
Professor Millette

372-620D PHYSICAL PROPERTIES OF SOILS. (2 lectures per week, one term). Structure and fabric, water retention and movement in soils, diffusion of gases, heat transfer. Applications to soil strength, infiltration and evaporation of water, soil temperature and freezing.
Professor Warkentin

* **372-630D SOIL MINERALOGY.** (2 lectures per week, one term). Structure and identification of minerals, weathering, properties of clay surfaces, adsorption on clays, ion exchange.
Professors MacKenzie and Warkentin

372-640D GRADUATE SEMINAR. (1 hour per week). Discussions of selected topics in soil science. Reports to be prepared and presented by students.
Staff

372-700D Ph.D. PRELIMINARY EXAMINATION.
Staff and Others

372-701D Ph.D. COMPREHENSIVE EXAMINATION.
Staff and Others

374-602B CONSERVATION ECOLOGY. (3 lectures per week, one term). Discussion of ecological principles which relate to resources used, conservation practices and the development of a conservation ethic.
Professor Bider

374-605B WILDLIFE ECOLOGY. (2 class hours per week, one term). Discussion of problems in wildlife ecology with special reference to the research interests of staff and students involved.
Professors Bider and Tittman

McGill University

Faculty of
Graduate Studies and Research
1976 — 77

Section "B"
Biological Sciences

NOTE: Courses marked with an asterisk (*) are not offered in 1976-77. The letters, which form part of course numbers, have the following significance:
A — Fall term course
B — Winter term course
L — Summer session part I course
C — Summer session part II course
D — Full session course (Fall and Winter terms)

The official McGill University mailing address is:
McGill University, P.O. Box 6070, Station A
Montreal, Quebec, Canada H3C 3G1

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B1 BELLAIRS RESEARCH INSTITUTE

The Bellairs Research Institute is situated on the St. James coast of the Island of Barbados. The Institute was established through the donation of the late Commander Carlyon Bellairs who left his estate on the island in trust to the University for the support of a research institute. The Institute emphasizes Marine Biology (see under Marine Sciences Centre) and Tropical Climatology (see under Geography). It also holds every other year a field course in Tropical Marine Ecology. Information relating to the Institute and its activities may be obtained from the Director, The Bellairs Research Institute, St. James, Barbados, West Indies, or from the Director of the Marine Sciences Centre.

B2 DEPARTMENT OF BIOCHEMISTRY

STAFF

Professors — A.F. GRAHAM *(Chairman);* M.J. FRASER; E.A. HOSEIN; D. RUBINSTEIN; S. SOLOMON; T.L. SOURKES; J.H. SPENCER; L.S. WOLFE

Emeritus Professor — K.A.C. ELLIOTT

Associate Professors — R. BLOSTEIN; P.E. BRAUN; D.T. DENHARDT; R. M. JOHNSTONE; A.R. WASSERMAN *(on leave)*

Assistant Professors — E.M. HARPUR; R.E. MacKENZIE; E.A. MEIGHEN; S. MILLWARD; W. MUSHYNSKI

Lecturer — M.R. REESAL

Research Associates — P.J. DOLPHIN; K. HARBERS

Associate Members — M.K. BIRMINGHAM *(Psychiatry);* — L.F. CONGOTE *(Exp. Medicine);* J. DUPRE *(Exp. Medicine);* D. EDWARD *(Exp. Surgery);* W.C. GALLEY *(Chemistry);* L. GOODFRIEND *(Exp. Medicine);* L.M. JERRY *(Exp. Medicine);* H. PAPPIUS *(Exp. Neurochemistry);* J.F. PERDUE *(Lady Davis Institute);* C. SCRIVER *(Pediatrics);* J. SHUSTER *(Exp. Medicine)*

REQUIREMENTS

Students must submit with their applications for admission the results of the Graduate Record Examination (aptitude test, and achievement test in Biology or Chemistry), three letters of recommendation and a brief resumé indicating in as much detail as possible their particular field of interest for graduate study.

Students who have satisfactorily completed an Honours course in Biochemistry and who have been accepted as research students by the Department and by a research director approved by the Department may register for the M.Sc. degree which usually involves a two-year program. Following completion of one year of study in the Department, suitable candidates may be allowed to proceed directly to the Ph.D. degree depending on the ability they display in research and course work.

A program of courses for each student is determined by the individual research director in consultation with the Chairman of the Department's Graduate Advisory Committee. Students who have not obtained a suitable Honours degree or its equivalent will be required to take a qualifying year or otherwise make up for deficiencies.

Candidates who have obtained the M.Sc. degree with satisfactory standing from this department or who have completed an acceptable M.Sc. program at another university, enter the graduate program at the Ph.D. level.

Research projects deal with the biochemistry of erythrocytes, liver, brain, muscle, chloroplasts, endocrine organs, nucleic acids, peptides, lipids, and transport phenomena. These projects are conducted in departmental laboratories, the Biochemistry Laboratories of the Allan Memorial Institute of Psychiatry, the Laboratory of Experimental Neurochemistry of the Montreal Neurological Institute, the University Clinics of the Montreal General and the Royal Victoria Hospitals and in certain other laboratories.

There is no second language requirement for Ph.D. students, except where individual research directors wish to make such a requirement for their own students. Students whose mother tongue is not English must be proficient in English and may be required to take a remedial English course if the research director deems this necessary.

COURSES FOR HIGHER DEGREES

Graduate-Level Courses

507-602A TOPICS IN MOLECULAR BIOLOGY. (Admission by permission of instructors only).
Professors Fraser and Millward

507-503B IMMUNOCHEMISTRY. (Admission by permission of instructors only).
Professors Shuster and Jerry
(University Clinic, Montreal General Hospital; University Clinic, Royal Victoria Hospital)

ADVANCED UNDERGRADUATE COURSES

507-302D METABOLISM AND REGULATION. (Prerequisite: Biology 177-201D; Co-requisite: Biology 177-301A, 302B).
Professors Rubinstein, Johnstone and Staff

507-404B BIOPHYSICAL CHEMISTRY. (Prerequisites: Chemistry 180-204A, 214B or 213A, 223B required; Chemistry 180-313A recommended. This course is also listed as Chemistry 180-404B).
Professors Meighen and Galley (Chemistry)

507-450B PROTEIN STRUCTURE AND FUNCTION. (Prerequisites: Biochemistry 507-302D and/or sufficient organic chemistry).
Professors Fraser and Meighen

507-454A NUCLEIC ACIDS. (Prerequisite: Biochemistry 507-302D or permission of the instructor).
Professors Denhardt and Spencer

* **507-455B NEUROCHEMISTRY.** (Prerequisite: Biochemistry 507-302D).
Professors Sourkes, Wolfe and Staff

507-456B BIOCHEMISTRY OF MEMBRANES (Prerequisites: Biochemistry 507-302D; Chemistry 180-214B or equivalent, or by consent of the instructors). *Offered in alternate years, commencing 1976-77.*
Professors Braun and Blostein

SEMINARS

There are three series of seminars. The *Research Seminar* consists of a presentation by the student of the background, experimental approach, and significance of his or her proposed research. This seminar is required of all M.Sc. students in the department who plan to proceed to the Ph.D. degree as well as by students entering at the Ph.D. level. The *Thesis Seminar* consists of a presentation by every third or later year Ph.D. candidate on his research. *Departmental Seminars* consist of presentations by members of the staff and visiting scientists outlining their work with their collaborators. Graduate students are required to attend all the above seminars and certain informal seminars, and are encouraged to attend relevant scientific meetings.

B3 DEPARTMENT OF BIOLOGY

STAFF

Professors — W.G. BOLL; E.R. BOOTHROYD; P.S.B. DIGBY; F.C. FRASER *(on leave);* S.P. GIBBS; P.R. GRANT; W.F. GRANT; G.A. MACLACHLAN *(on leave);* J. MARSDEN; J.D. METRAKOS; B.B. MUKHERHEE; F. RIGLER *(Chairman);* C.M. WILSON

Associate Professors — A.N. AUCLAIR; A.H. BUSSEY *(on leave);* R. CHASE; D. FROMSON; M.E. GOLDSTEIN; E. KAFER-BOOTHROYD; J. KALFF; W.C. LEGGETT *(on leave);* R.E. LEMON; G.A. MANLEY; W. OECHEL *(on leave);* V. PASZTOR; R.J. POOLE; R. SATTLER; R. SINCLAIR; K. SITTMANN; J.L. SOUTHIN; D. TRASLER; H. TYSON; N. WOLFSON

Assistant Professors — B. BRANDHORST; D. KRAMER; R. LEVINE; D. MADISON; R. PETERS; D.P.S. VERMA

OTHER McGILL STAFF WITH GRADUATE STUDENTS OR TEACHING RESPONSIBILITIES IN THE BIOLOGY DEPARTMENT

Professors — R. CARROLL *(Redpath Museum);* M.J. DUNBAR *(Marine Sciences);* J. LEWIS *(Redpath Museum);* R.A. MACLEOD *(Microbiology);* J.E. McFARLANE *(Entomology)*

Associate Professors — C. LALLI *(Marine Sciences);* C.R. SCRIVER *(Montreal Children's Hospital)*

Assistant Professors — R. GOLD *(Montreal Children's Hospital);* P. HECHTMAN *(Montreal Children's Hospital);* E. MITCHELL *(Fisheries Research Board);* L. PINSKY *(Jewish General Hospital);* H. REISWIG *(Redpath Museum);* H.M. SCHULMAN *(Jewish General Hospital)*

The Department of Biology has available a brochure describing the admission and degree requirements for the M.Sc. and Ph.D. in Biology. A summary of the research interests of each staff member is included. Enquiries concerning admission should be directed to the Secretary of the Graduate Training Program, Department of Biology.

The research interests of the department are focussed on four main areas, namely: Human Genetics, Ecology, Cell, Molecular and Developmental Biology, and Neurobiology and Behaviour. There are also individual staff members whose work lies outside these areas. Courses available include specialized senior undergraduate courses (see Science Faculty Announcement) as well as those restricted to graduate students.

COURSES FOR HIGHER DEGREES

General Courses

177-650, 177-651, 177-652 (A,B or C). RECENT ADVANCES IN BIOLOGY. Directed reading, seminar and discussion courses in various subjects of current interest in biological research.

177-655, 177-656 (A,B or C). LABORATORY PROJECTS AND TECHNIQUES. Directed training in selected methods used in various areas of current interest in biological research.

177-700D DOCTORAL QUALIFYING EXAMINATION. This will be an oral qualifying examination arranged by members of the candidate's Supervisory Committee within 15 months of registration.

177-702D Ph.D. SEMINAR. Doctoral candidates are required to give a public oral presentation of their major results before submitting a thesis.

LANGUAGE EXAMINATION. At the discretion of their Supervisory Committee doctoral candidates may be required to demonstrate facility in a foreign language.

Specific Courses

177-500C ADVANCED TECHNIQUES IN CELL AND MOLECULAR BIOLOGY. (1 lecture and 6-8 laboratory hours per day, during a 3-4 week summer session, starting 1976; Prerequisites: 177-301A, 302B and permission of the instructor). This course is intended for selected cell and molecular biology honours and graduate students. Techniques used are those involved in molecular studies of transcriptional and translational regulation in eucaryotic cells, e.g. nucleic acid and protein synthesis *in vitro*, *de novo* synthesis of enzymes, nucleic acid hybridization, cell fractionation and analytical methods, etc.
Professor Verma

177-522B TOPICS IN GENETIC REGULATION (AND RECOMBINATION). (Irregular schedule of seminars or conferences; Prerequisite: 177-422A). Investigation and discussion of recent advances in molecular genetics including genetic regulation of protein synthesis, DNA-repair, recombination, etc., and their relevance to studies in higher organisms including man.
Professor Kafer-Boothroyd

177-524B MOLECULAR BIOLOGY OF DEVELOPMENT. (Prerequisites: 177-201D, 303A, 320B; or permission of instructors). An advanced seminar course covering the most recent research in molecular biology of development. Examples from both plant and animal systems will be examined and presented. Students will prepare and present seminars covering topics related to the regulation and control of gene expression in developing eucaryotic organisms.
Professors Brandhorst, Fromson and Verma

* **177-575A ADVANCES IN POPULATION GENETICS.** (2 lectures, 1 conference; Prerequisites: 177-373A, 177-325A or 177-372B). Discussion of recent advances in genetics relevant to population biologists in ecology and human genetics.
Professors Sittmann and Tyson

177-587B DEVELOPMENTAL NEUROBIOLOGY. (2 seminar hours or 2 lecture hours; Prerequisites: 177-303A, 386A or 204-308D). Discussion and lectures of current research in the field. Topics encompass all aspects of development from neuroembryology to neural regeneration in adult animals. Critical analysis of presented material is encouraged.
Professors Levine and Marsden

177-588A ADVANCED NEUROBIOLOGY. (2 hours seminar; Prerequisite: 177-386A or permission of instructor). Discussion primarily of important current research. Topics emphasize cellular neurophysiology and the functional organization of nervous systems. Includes both vertebrate and invertebrate material.
Staff

177-595A ADVANCED SEMINAR IN BEHAVIOUR. (2 hour seminars; Prerequisites: 177-391A or 392B or equivalent and permission of instructors). A graduate and advanced undergraduate seminar concerned with mechanisms in animal behaviour. Selected topics include sensory mechanisms of communication, social behaviour and organization, animal orientation, physiological correlates of behaviour, and the sequential and temporal organization of behaviour. The emphasis will be on studies having a zoological perspective.
Professors Madison and Lemon

* **177-596A SEMINAR IN BEHAVIOURAL ECOLOGY.** (Prerequisite: permission of instructors). A seminar course for graduate and advanced undergraduate students concerned with ecological and evolutionary perspectives on behaviour. Potential topics include aspects of altruism, grouping mating systems, feeding strategies, antipredator behaviour and habitat selection.
Professors Kramer and P. Grant

177-617A DEVELOPMENTAL MAMMALIAN GENETICS. (3 hours; lectures and conferences; Prerequisites: 180-204A, 180-222A, B, 177-274A or 177-202B, 177-303A, 177-310B; 177-372B recommended; and permission of instructor required). An advanced course for final year students where the main emphasis will be on experiments where gene differences altering development or environmentally-induced differences in embryonic development throw light on the processes of normal mammalian development. Graduate students taking this course at the graduate level are given additional assignments.
Professor Trasler

177-627A ECOSYSTEMS. (2 hours lectures, 3 hours laboratory; Prerequisite: 177-305A). A comparative study of North American ecosystems including arctic tundra, grassland, and coniferous, deciduous, and tropical rain forests. Emphasis is given to functional attributes such as energy and nutrient flux, system regulation, productivity, and efficiency. Systems analysis and the relevance of these properties to management of individual ecosystems will be discussed. A special reading assignment will be required of graduate students.
Professor Auclair

† **177-629A PHYSIOLOGICAL PLANT ECOLOGY.** (2 hours lectures, 3 hours laboratory; Field trips; Prerequisite: 177-305A). A consideration of physiological responses and adaptations of plants to their environment. Contemporary approaches to the measurement and study of relevant physiological and micro-environmental parameters will also be presented. In addition to the regular requirements

graduate students will carry out an independent research project.
Professor Gale

† **177-632A LIMNOLOGY.** (3 hours lectures, 1 hour conference; Prerequisite: 177-305A). A study of the physical, chemical and biological characteristics of fresh-water, with emphasis on the role of the plankton in the economy of lakes. Undergraduate students prepare one literature review while two are required of graduate students.
Professor Kalff

† **177-633A LIMNOLOGY LABORATORY.** (5 hours laboratory/field trip per week; Pre and Corequisites: 177-305A, 177-632A and permission of instructor). A laboratory and field trip course on the physical, chemical and biological characteristics of lakes. This course is given in conjunction with Biology 177-632A; restricted enrolment. For additional graduate student requirements see Biology 177-632A.
Professor Kalff

177-642D BIOLOGICAL OCEANOGRAPHY. (3 hours lectures, several 3 hour laboratory periods; Pre- or Corerequisites: 177-305A, 348D). An introduction to the physical and chemical factors of the marine environment, the ecological divisions of the ocean, history and methods of marine research. An ecological account of marine populations in relation to their physical and chemical environment; marine plankton and production processes, marine pollution. Additional assignments will be required of graduate students.
Professors Dunbar, Lalli and Lewis

177-665B TOPICS IN PLANT BIOCHEMISTRY. (3 hours; Lectures and discussion; Prerequisites: 177-201D; 177-303A, 507-352D recommended). A review by lectures, seminars and discussion of important advances in recent years, e.g. molecular structures of macromolecules, biosynthetic processes, mechanisms of hormone action, metabolic regulation. Graduate students enrolled in this course will be expected to take more responsibility for discussion and review than undergraduates.
Professor MacLachlan

177-676B HUMAN BIOCHEMICAL GENETICS. (3 hours lectures with some student participation; Prerequisites: 177-201D, 177-274A or 177-202B, 180-302A,B, 189-231A, B). An up-to-date and comprehensive account of the biochemical aspects of human genetics, and relationship of this knowledge to broader questions including evolution, eugenics and treatment of genetic disease. Graduate students will be required to submit a hypothetical grant application.
Professors Gold, Pinsky and Scriver

177-680A TECHNIQUES IN ELECTRON MICROSCOPY. (5 hours laboratory; Prerequisite: Permission of instructor). An intensive course in the techniques of electron microscopy for students who intend to do research on cell ultrastructure.
Professor Gibbs

177-693D ADVANCES IN ANIMAL BEHAVIOUR. (2 hours seminar; Prerequisite: Permission of instructor). A senior course considering in depth topics of current interest, which may range from physiological to ecological aspects of behaviour according to the interests of the class.
Professor Kramer and Staff

Courses Given at Macdonald College

Several of the following courses will be offered according to demand (consult staff).

177-670A CYTOLOGY. (2 hours and one laboratory period). An intensive study of the cell with emphasis on the nucleus, nuclear division, chromosome morphology, chromosome aberrations, euploidy and aneuploidy, and chromosome behaviour in hybrids.
Professor W. Grant

177-671B CYTOGENETICS. A study of cytological and genetical topics at an advanced level including polyploidy, apomixis and parthenogenesis, chromosome and gene replication, sex determination, and karyotype analysis.
Professor W. Grant

177-672B MICROBIAL GENETICS. An analysis of recent progress in the genetics of microorganisms including viruses, bacteria, yeasts, paramecia, algae and fungi.
Professor W. Grant

177-673A MUTAGENESIS AND RADIATION BIOLOGY. A study of the nature of mutations and the genetic effects of radiation and chemical mutagens on plants and animals and in crop improvement.
Professor W. Grant

177-675B STATISTICAL METHODS IN GENETICS. A presentation and discussion of statistical methods of analysing genetic changes in populations of domestic animals and plants, with particular reference to pedegrees, heterosis, selection, etc.
Professor Tyson

B4 MARINE SCIENCES CENTRE

STAFF

Professors — M.J. DUNBAR *(Biology) (Chairman);* E.R. POUNDER *(Physics) (Vice-Chairman);* J.B. LEWIS *(Director, Redpath Museum);* M.P. LANGLEBEN *(Physics)* G. LAROCHE
Associate Professors — B.F. d'ANGLEJAN; C.M. LALLI
Assistant Professors — R.G. INGRAM; F. SANDER

(Director, Bellairs Research Institute); D.C. MacLELLAN

Senior Staff Demonstrator — R.A. BUCHANAN

Associate Members — SVENN ORVIG *(Meteorology);* M.E. GOLDSTEIN *(Biology);* R.A. MACLEOD *(Microbiology);* S.B. SAVAGE *(Civil Eng.);* ROGER KNOWLES *(Microbiology);* E.W. MOUNTJOY *(Geological Sciences);* H.M. REISWIG *(Redpath Museum);* R. HESSE *(Geological Sciences)*

Graduate students will take such courses, including cognate courses in other departments, as are considered necessary for their training and for the development of their particular fields of specialization. All students are expected to take courses 177-442D, 395-660D, and 198-309A, or equivalent. Primary emphasis for both the M.Sc. and Ph.D. degrees is placed upon research and thesis presentation. The comprehensive examination for Ph.D. candidates usually takes place at the end of the second year of study; it covers the whole field of marine science but allows for the specialized interests and training of each student in Botany, Zoology, Microbiology, Physics or Geology.

Students are accepted on the basis of a 3.0 Cumulative Grade Point Average in an appropriate subject, or high standing in general science; a qualifying year in addition to the minimum degree requirement may be necessary, at the discretion of the Chairman or Vice-Chairman.

The Marine Sciences Centre is inter-departmental in scope, emphasizing the essential inter-disciplinary nature of the science of Oceanography. Excellent laboratory and library facilities are available for research, and opportunities for field work exist in the Arctic, the estuary of the St. Lawrence river, the Gulf of St. Lawrence, the Canadian Eastern Seaboard, and at the Bellairs Research Institute at Barbados. The special research interests of the Centre include the physics of sea ice, the energy exchange between atmosphere and hydrosphere, marine climatology, the dynamics of estuaries, marine bacteria, growth and life cycles of marine organisms, marine productivity, marine biogeography and sedimentation.

The Redpath Museum of McGill University offers teaching and research facilities in marine biology and keeps extensive plankton collections.

COURSES FOR HIGHER DEGREES

Advanced Undergraduate Courses

177-442D BIOLOGICAL OCEANOGRAPHY. (3 hours lectures and labs.). Physical and chemical parameters of the environment and their influence on marine life; ecological divisions of the ocean; descriptions of marine life; plankton biology and biogeography; history and methods of marine research; ecology of benthic organisms; primary and secondary production in the ocean; marine fisheries; marine microbiology; pollution; migration.
Professors Lewis and Dunbar

198-309A DESCRIPTIVE OCEANOGRAPHY. (3 hours). Major physical and chemical properties of sea water; methods of measurements, space and time distribution. The geostrophic approximation and the dynamic method. General features of the oceanic circulation.
Professor d'Anglejan

198-319B INTRODUCTION TO DYNAMIC OCEANOGRAPHY. (3 hours). Equations of motion. Geostrophy. Boundary layers. Horizontal wind-driven circulation. Waves and tides.
Professor Ingram

Graduate Courses

395-537B ADVANCED INVERTEBRATE ZOOLOGY (3 hours). Descriptions of selected marine invertebrate taxa. Functional morphology, ecology and evolution. Feeding mechanisms; reproductive patterns; interactions with other marine organisms; laboratory techniques.
Professor Reiswig

395-639A TROPICAL MARINE ECOLOGY. (2 hours lectures and labs.). The ecology of marine organisms and marine communities of tropical oceans.
Professor Lewis

395-645A WATER POLLUTION: BIOLOGICAL ASPECTS. (1 hour). Aspects of freshwater and saltwater uses, with emphasis on marine environments, critical definitions of water quality, means of assessing water quality, the role and importance of biological responses in the identification and evaluation of water pollution, and a review of water treatment techniques, the biological impact of pollution on coastal areas, estuaries, rivers and lakes. Marine pollution is also discussed from the global point of view as a worldwide phenomenon.
Professor Laroche

395-660D SEMINAR IN GENERAL OCEANOGRAPHY. (2 hours). Advanced seminar course on research in salt water environments, with emphasis on contemporary work. Discussion of the original literature, recent advances and basic theory.
Staff

* **395-691D ADVANCED MARINE ECOLOGY.** (2 hour seminar). Primary and secondary production; physiological ecology, population dynamics, distribution analysis, and diversity of marine organisms.
Professor Lalli

395-695A PHYSICS OF THE OCEAN. (3 hours). General circulation on "Beta" plane, wind and thermally driven flows. Two layer models. Boundary currents.
Professor Ingram

395-696B SEMINAR COURSE IN PHYSICAL OCEANOGRAPHY. (2 hours). Theoretical aspects of the general oceanic circulation.
Professor Ingram

395-697B MARINE GEOLOGY AND GEOCHEMISTRY. (3 hours). Recent studies relating to the geophysics of the ocean basins and pelagic sedimentation. Geophysical observations and morphology of the ocean basins. Geochemistry of pelagic deposits in relation to terrigenous sources, life processes and sea water composition. Deep sea stratigraphy; methods of correlation; the sedimentary record.
Professor d'Anglejan

395-698B TOPICS IN OCEANOGRAPHY. (3 hours). Interdisciplinary studies of selected topics, including: waves and tides, estuaries, short and long term cycles, factors controlling the vertical distribution of organisms, particulate matter and sedimentation.
Staff

* **395-721D SEDIMENTS AND MARINE GEOLOGY.** (2 hour seminar lectures and assignments). Classical and recent research concerning principles of sedimentation, sedimentary environments including deltas, tidal flats, continental shelf and slope, geosynclines, ocean basins, submarine canyons, ocean currents, turbidity currents, sediment geochemistry, reefs, ocean structure.
Professors d'Anglejan, Hesse and Mountjoy

B5 DEPARTMENT OF MICROBIOLOGY AND IMMUNOLOGY

STAFF

Professors — S.I. VAS *(Chairman);* B.H. MATHESON; J.W. STEVENSON; W. YAPHE
Associate Professors — Z. ALI-KHAN; C.A. BUTAS; E.C.S. CHAN; P.M. COOKE; J. de VRIES; P. GILL; R. HAND; L. KAPICA; C.H. PAI; G.K. RICHARDS; H.G. ROBSON; R. SIBOO
Assistant Professors — A.F. DOSS; I.B. FABRIKANT; J. GORDON; E. MANKIEWICZ; M. MARKS; L. MARTINEZ; J.L. MEAKINS; J. MENDELSON
Lecturer — M. BLANC; S. NOMMIK
Demonstrator — C. SHAW
Associated Members — R.D. GUTTMANN (Medicine); C.K. OSTERLAND (Medicine)

REQUIREMENTS

Candidates are required to hold a B.Sc. degree with at least second class Honours or the equivalent in Microbiology and Immunology or the M.D. degree with high standing in Microbiology, Biochemistry and Pathology.

Those who do not meet the above qualifications may be required to take longer than normal to complete course requirements.

The clinical laboratory services in bacteriology, virology and mycology are available to candidates as a means of instruction and as a source of material for study.

REQUIREMENTS FOR THE M.Sc. DEGREE

The following requirements must be satisfied.
(1) Presentation of a satisfactory thesis.
(2) Attendance at courses 528-602D and 528-703D and presentation of at least two seminar topics during the year.
(3) Formal courses with examination where needed (528-501D, 528-525B, 528-527B — see below).

REQUIREMENTS FOR THE M.Sc. (APPLIED) DEGREE

This is a new program first offered by the Department in the 1975-76 session. The principal aim of the program is to provide specialized training in APPLIED Medical Microbiology and Immunology to those who might be expected to function as assistants to the directors of hospital clinical diagnostic laboratories and public health laboratories including units concerned with pollution control insofar as they relate to microbial activities. It is also to be hoped that the program will enable graduates to adapt more readily to a career in the pharmaceutical industries and related industries of some significance in the health field than does the present conventional M.Sc. program in Microbiology and Immunology.

Candidates must satisfy the general requirements noted above for the conventional M.Sc. degree except that the minimum in-residence requirement is two full academic sessions (i.e. 1½ years). In addition to one year of bench training in diagnostic medical microbiology and formal course work, including seminars (see below), a research project of a practical nature will form an important part of the overall program and a comprehensive research report must be presented. A detailed brochure describing the M.Sc. (Appl.) program is available, upon request, from the Department of Microbiology and Immunology.

REQUIREMENTS FOR THE Ph.D. DEGREE

Following satisfactory completion of the work for the M.Sc. degree candidates may present themselves for examination for the Ph.D. degree after not less than two full years of research and the presentation

of a satisfactory thesis. However, certain other requirements must also be fulfilled:

(a) Attendance at courses 528-702D and 528-703D with the presentation of at least two seminar topics each year.

(2) A comprehensive examination in Microbiology and Immunology (Course 528-701D) must be passed. It is held during the final year of study and at a time not later than six months before submission of the thesis.

COURSES FOR HIGHER DEGREES

Advanced Undergraduate Courses

* **528-313B PARASITOLOGY.**

528-315B THE PATHOGENIC FUNGI.

528-421A SYSTEMATIC BACTERIOLOGY.

528-422A PATHOGENIC BACTERIA.

528-423A MICROBIAL PHYSIOLOGY.

528-424A FUNDAMENTAL VIROLOGY.

Graduate Courses

528-501D ADVANCED MICROBIOLOGICAL TECHNIQUES.

528-525B PATHOGENIC VIRUSES.

528-527B INFECTIOUS IMMUNOLOGY.

528-601D COMPREHENSIVE EXAMINATION FOR M.Sc. CANDIDATES.

526-602D GRADUATE SEMINAR. M.Sc. LEVEL.

528-603H PRACTICAL DIAGNOSTIC MICROBIOLOGY AND IMMUNOLOGY (Bench Training) (Offered only to M.Sc. (Appl.) applicants).

528-604D INDEPENDENT RESEARCH PROJECT IN APPLIED MICROBIOLOGY AND IMMUNOLOGY (M.Sc. (Appl.) Program).

528-605D ADVANCED INDEPENDENT RESEARCH PROJECT IN APPLIED MICROBIOLOGY AND IMMUNOLOGY (M.Sc. (Appl.) Program).

528-606D ADVANCED VIROLOGY (M.Sc. (Appl.) Program).

528-701D COMPREHENSIVE EXAMINATION FOR Ph.D. CANDIDATES.

526-702D GRADUATE SEMINAR. Ph.D. LEVEL. (Lectures and discussions once a week. All graduate students are required to participate).

528-703D CURRENT TOPICS IN MICROBIOLOGY AND IMMUNOLOGY. (Discussion groups).

B6 DEPARTMENT OF PHYSIOLOGY

STAFF

Professors — J. MILIC-EMILI *(Chairman);* R.I. BIRKS *(on leave 1976-77);* T.M.S. CHANG; B.A. COOPER; J.H. DIRKS; P. GOLD; K. KRNJEVIC; F.C. MacINTOSH; G. MELVILL-JONES

Associate Professors — M.W. COHEN; D.R. FIRTH; M.M. FROJMOVIC; V. KLISSOURAS; W.S. LAPP; M. LEVY; M. MACKEY; G. MANDL; G. MISEROCCHI; J.S. OUTERBRIDGE; C. POLOSA; P. SEKELJ; A. WECHSLER

Assistant Professors — A.W. CHAWLA; L. GLASS; P. KONGSHAVN; K. LUKOWIAK; P. NOBLE; S. POTASHNER; P. WELDON; R.L. WILLIAMS

Associate Members — R.F.P. CRONIN *(Prof. Medicine);* B.O. DUBROVSKY *(Assoc. Prof., Psychiatry);* H.L. GOLDSMITH *(Prof., Exp. Medicine);* C.A. GORESKY *(Prof., Medicine);* D. HORROBIN *(Prof. Med.);* P.T. MACKLEM *(Prof., Medicine);* J.M. McKENZIE *(Prof., Exp. Medicine);* M.M. MORRIS *(Assist. Prof., Anaesthesia);* G. QUAMME *(Assist. Prof. Exp. Med.) ;* S. ROSSIGNOL *(Assist. Prof. Univ. of Montreal);* J.F. SEELY *(Assist. Prof., Exp. Medicine);* M. YOUNES *(Assoc. Prof. Med.)*

ADMISSION

Students who have completed an Honours Program in Physiology or some other appropriate undergraduate program and who have been accepted by a research director and by the Department may register for the M.Sc. degree. After one year of study in the Department those M.Sc. students who display a high standard in research and course work may be permitted to proceed directly to the Ph.D. degree. Those students who do not enter the Ph.D. program at the end of M.Sc. 1 may be permitted to write an M.Sc. thesis. Students who obtain an M.Sc. degree may apply for entrance into the Ph.D. program.

COURSE REQUIREMENTS

Research Seminars — M.Sc. students are required to give at least one seminar before submission of their thesis or before being permitted to enter a Ph.D. program. Ph.D. students are required to give a seminar at least once every two years. **Comprehensive Examination in Physiology** — required for the M.Sc. and/or the Ph.D. degree to show broad knowledge of Physiology and the capacity to integrate this knowledge at the intermediate level. **Other Course Work** — Students are usually expected to complete at least two of the Department's advanced or graduate courses in their first year. Other course requirements will depend on their field of study.

COURSES FOR HIGHER DEGREES

552-502A EXERCISE PHYSIOLOGY. Offered in conjunction with the Faculty of Education.
Professor Klissouras

552-507D ADVANCED APPLIED RESPIRATORY PHYSIOLOGY. Offered in conjunction with the Department of Experimental Medicine.
Professor Engel

552-508A ADVANCED RENAL PHYSIOLOGY. Offered in conjunction with the Department of Experimental Medicine.
Professor Levy

552-512A PHYSICAL METHODS IN BIOLOGICAL RESEARCH. Offered in conjunction with the Department of Experimental Medicine.
Professors Murphy and Ross

552-513D CELLULAR IMMUNOLOGY. Offered in conjunction with the Department of Experimental Medicine.
Professors Lapp and Gold

552-514B IMMUNOLOGY SEMINARS. Offered in conjunction with the Department of Experimental Medicine.
Professors Lapp and Gold

552-515A PHYSIOLOGY OF BLOOD I. Offered in conjunction with the Department of Experimental Medicine.
Professor Cooper

552-516B PHYSIOLOGY OF BLOOD II. Offered in conjunction with the Department of Experimental Medicine.
Professor Cooper

552-517B PHYSIOLOGICAL SUPPORT SYSTEMS.
Professor Chang

552-605B DYNAMICS AND CONTROL IN PHYSIOLOGICAL SYSTEMS. Offered in conjunction with Biomedical Engineering.
Professor Outerbridge

552-606A ADVANCED APPLIED CARDIOVASCULAR PHYSIOLOGY. Offered in conjunction with the Department of Experimental Medicine.
Professor Goldsmith

552-610B BIOPHYSICS.
Professor Mackey

552-631B SELECTED TOPICS IN APPLIED IMMUNOLOGY.
Professor Kongshavn

B7 DEPARTMENT OF PSYCHOLOGY

STAFF

Professors — D. BINDRA *(Chairman);* M.C. CORBALLIS; D.G. DOEHRING; VIRGINIA DOUGLAS; G.A. FERGUSON; R. KANUNGO; W.E. LAMBERT; J. MACNAMARA; R.B. MALMO; R. MELZACK; BRENDA MILNER; P.M. MILNER; E.G. POSER; M.S. RABINOVITCH; MURIEL STERN
Emeritus Professor — D.O. HEBB
Associate Professors — A.S. BREGMAN; D.C. DONDERI; A.A.J. MARLEY; R.O. PIHL; J.O. RAMSAY; T.R. SHULTZ; D. TAYLOR; G.R. TUCKER; N. WHITE; BLOSSOM WIGDOR; S. YULIS
Assistant Professors — FRANCES ABOUD; I.M. BINIK; SUSAN CAMPBELL; K. CLARK; M.S. CUMMINS; J. MacDOUGALL; C. OLSON; W.E. PIPER; J. WRIGHT; A. ZOLOVICH
Lecturer — A. ROSNER
Sessional Lecturer — ERIKA GUTBRODT
Clinical Consultants — S. BENAROYA; N. GREENBERG; P. GREGOIRE; G. NEMETH; A. PUTTERMAN

Graduate work in the Department of Psychology follows two main lines; experimental-theoretical and applied. Work in experimental-theoretical psychology leads to the M.A., M.Sc. and Ph.D. degrees in the psychology of human perception, cognition, learning and language, physiological, personality, social, child, psycholinguistics and quantitative psychology. Work in applied psychology leads to the Ph.D. degree in clinical psychology, and the M.Sc. (Applied) degree program is offered in certain particular fields.

Facilities for advanced research in a variety of fields are available within the Department itself. In addition, arrangements with the Departments of Psychology at the Allan Memorial Institute, Montreal Children's Hospital, Queen Mary Veterans' Hospital, the Douglas Hospital, and Jewish General Hospital, permit graduate students to undertake research in the hospital setting.

For full information about all programs, financial aid, and for application forms, contact the Graduate Admissions Secretary, Department of Psychology, McGill University, P.O. Box 6070, Montreal, Canada H3C 3G1. Telephone 392-5742.

REQUIREMENTS

Admission to graduate work will depend on an evaluation of the student's research interests and aptitude for original contributions to knowledge or for professional contributions in the applied field. The usual requirement for admission is an honours or major degree (B.A. or B.Sc.) in Psychology. This includes an introductory course plus six full courses (each equivalent to six semester hours). Experimental psychology, the theoretical development of mod-

ern ideas in psychology, and statistical methods as applied to psychological problems (equivalent to an introductory course) are essential. A knowledge of elementary physiology, physics or chemistry, and modern developments in other related biological or social sciences is desirable. An applicant who holds a Bachelor's degree but who has not met these usual requirements should consult a faculty member in his or her area of interest to determine which (if any) courses must be completed before the application can be considered. A student with insufficient preparation for graduate work may register as a special student in the Faculty of Arts or the Faculty of Science, and follow an appropriate course of study. Such registration requires the permission of the Department and carries no advantage with respect to a student's eventual admission to graduate studies.

NOTE: Applicants should submit to the Graduate Admissions Secretary by February 1: a completed application form, two copies of the personal academic background form, two copies of all university transcripts, two or more letters of recommendation, Miller Analogies and/or Graduate Record Examination scores, and a personal letter, outlining their experience, interests and objectives in psychology. Applicants should note that the deadline for many scholarships and fellowships is two to three months earlier than the February deadline.

REQUIREMENTS FOR M.A. AND M.Sc. DEGREES

Candidates must demonstrate a sound knowledge of modern theory, of its historical development, and of the logic of statistical methods as used in psychological experiments. They will be expected to have an understanding of the main lines of current work in other than their own particular field of specialization.

All candidates must take courses 204-650A, 204-651B and 204-660D and in addition any other course specified by the Department. The primary concern of the candidate, however, is the thesis. For this the exploratory work, at least, should get under way early in the year. A general comprehensive written or oral examination will be held which, in conjunction with the thesis itself, will determine the candidate's final standing for the degree.

REQUIREMENTS FOR THE Ph.D. DEGREE

The candidate for the Ph.D. degree in the theoretical-experimental program must demonstrate a broad scholarship, mastery of current theoretical issues in psychology and their historical development, and a detailed knowledge of his special field. A special comprehensive examination is written in one of the following: comparative and physiological psychology, learning and perception, social psychology and personality, measurement, developmental psychology or any other appropriate area.

Candidates for the Ph.D. degree in clinical psychology must demonstrate a high standard of scholarship in psychology and aptitude for the professional application of psychological knowledge. The clinical program is designed primarily to train senior personnel for work in hospitals and clinics. A number of avenues of specialization are, however, possible. Some students may wish to prepare themselves for careers in university teaching or clinical research; others may have an interest in behaviour disorders in the fields of developmental or educational psychology. The time necessary to attain the degree is four years beyond the B.A. or B.Sc. degrees. No intermediate or terminal M.A. or M.Sc. degrees are awarded to students in the Ph.D. clinical program. All students are required to write a thesis and demonstrate research capabilities.

The Department of Psychology does not ordinarily require an examination in a foreign language.

COURSES AND SEMINARS FOR HIGHER DEGREES

204-454D LABORATORY METHODS IN PSYCHOBIOLOGY.

204-455D RESEARCH METHODS IN PSYCHOLINGUISTICS.

204-601D Reference number for comprehensive examination written by candidates for the M.A., M.Sc., or M.Sc. (Appl.) degree.

204-615D INTELLIGENCE AND PERSONALITY. (3 hours).

204-630A PSYCHOPATHOLOGY. (1½ hours).

* **204-635D ADVANCED EDUCATIONAL PSYCHOLOGY.** (3 hours).

204-640D DESIGNING, DEVELOPING AND EVALUATING INSTRUCTIONAL SYSTEMS. (3 hours).

204-641D BEHAVIOUR DEVIATIONS. Appraisal and Modification. (3 hours).

204-650A ADVANCED STATISTICS I. A course in advanced statistics with specialization in experimental design. (3 hours).

204-651A ADVANCED STATISTICS II. A course in advanced statistics with specialization in regression techniques. (3 hours).

204-660D PSYCHOLOGICAL THEORY. (3 hours). Seminar designed as an introduction to more advanced graduate courses.

204-670D RESEARCH PROBLEMS IN CLINICAL PSYCHOLOGY. (1 hour).

204-690D COMPUTERIZED LABORATORY METHODS IN PSYCHOLOGY. (3 hours).

204-701D Reference number for comprehensive preliminary Ph.D. examinations.

204-702F SUMMER INTERNSHIP — JUNIOR.

204-703F SUMMER INTERNSHIP — SENIOR.

204-704D SPECIALIZED PRACTICUM.

204-705D Reference number for research project of M.Sc. (Appl.) students.

204-710 to 715 COMPARATIVE AND PHYSIOLOGICAL PSYCHOLOGY. (2 hours).

204-716 to 721 LEARNING AND MOTIVATION. (2 hours).

204-722 to 727 PERSONALITY AND SOCIAL PSYCHOLOGY. (2 hours).

204-728 to 733 CLINICAL PSYCHOLOGY. (2 hours).

204-734 to 739 DEVELOPMENT AND LANGUAGE. (2 hours).

204-740 to 745 PERCEPTION AND COGNITION. (2 hours).

204-746 to 751 QUANTITATIVE AND INDIVIDUAL DIFFERENCES. (2 hours).

B8 WILDLIFE BIOLOGY

Qualified students interested in undertaking graduate studies in the area of Wildlife Biology should consult the Chairman, and/or Professor J.R. Bider, Department of Renewable Resources, Macdonald College. Special programs of study are available to such students.

McGill University

Faculty of
Graduate Studies and Research
1976 — 77

Section "C"
Humanities

NOTE: Courses marked with an asterisk (*) are not offered in 1976-77. The letters, which form part of course numbers, have the following significance:
A — Fall term course
B — Winter term course
L — Summer session part I course
C — Summer session part II course
D — Full session course (Fall and Winter terms)

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* The official McGill University mailing address is:
McGill University, P.O. Box 6070, Station A
Montreal, Quebec, Canada H3C 3G1

Legal Deposit II 76

C1 DEPARTMENT OF ART HISTORY

STAFF

Professors — W.O. JUDKINS *(Chairman)*; GEORGE GALAVARIS *(Director of Graduate Studies)*;
Associate Professors — ROSEMARIE BERGMANN; R.N. BERTOS
Assistant Professors — T. GLEN; R. WINDSOR LISCOMBE

REQUIREMENTS

Admission

For admission to the M.A. or Ph.D. programs, candidates are normally expected to have a B.A. degree with Honours, either in Art History alone or in Art History and one other related subject — or the equivalent, i.e. one-third to one-half of the candidate's undergraduate courses in an integrated program, passed with appropriate standing. For candidates from institutions not offering such undergraduate programs, provision is made for preliminary studies qualifying the candidate for admission to graduate work. Courses in studio practice do not count. Please see, also, the language requirements given under the degree programs below. Applications and supporting documents should be submitted by January 31.

Requirements for the M.A. Degree

1) Ten half-courses approved by the Department, six in the first graduate year.
2) Written *general* examination on the History of Art.
3) Oral examination on one of the following five fields to which the proposed thesis topic belongs: Ancient, Mediaeval, Renaissance, Baroque — to 1750, Modern — from 1750.
4) Thesis on a topic approved by the Department from the candidate's chosen field of specialization.

Language requirements for the M.A. degree: reading knowledge of English and French and a minimum of one additional approved classical or modern language, before admission to the second year of the M.A. program.

Requirements for the Ph.D. Degree

Normally, the first year of the Ph.D. program will be spent fulfilling the first-year requirements of the M.A. degree. In appropriate cases the Department may, at the end of the first year, advise the student to bypass the M.A., enter the second year of the Ph.D. program and proceed to the Ph.D. qualifying examinations, consisting of, 1) a written *comprehensive* examination on the History of Art, and 2) an oral examination on one of the following five fields of specialization chosen by the candidate: Ancient, Mediaeval, Renaissance, Baroque — to 1750, Modern — from 1750. These are normally taken at the end of the second year.

The candidate may be permitted or advised to spend one of the three resident years required by Graduate Faculty regulation at another approved university.

Only with the permission of the Department can those holding the M.A. degree proceed to the Ph.D. qualifying examinations, and those who have passed the Ph.D. qualifying examinations, or their equivalent, proceed to the doctorate.

Language requirements for the Ph.D. degree: reading knowledge of three modern languages and at least one classical language, approved by the Department.

The requirements for the Ph.D. degree are fulfilled with the completion of the dissertation and its successful oral defence. The Department is prepared to direct dissertations in the following fields: Ancient, Byzantine, Mediaeval, Renaissance (Italian and Northern) and others, by special arrangement, wherein adequate supervision and resources can be provided.

COURSES FOR HIGHER DEGREES

Graduate Courses

* **123-641A or B GREEK AND ROMAN ARCHAEOLOGY.**

* **123-644A or B MEDIAEVAL ART AND ARCHAEOLOGY.**

123-647A or B ART OF THE ITALIAN RENAISSANCE.

* **123-650A or B NORTHERN RENAISSANCE ART.**

123-653A or B BAROQUE ART AND ARCHITECTURE.

123-656A or B 19TH CENTURY PAINTING AND SCULPTURE.

123-659A or B CONTEMPORARY ART AND CRITICISM.

* **123-673A or B RENAISSANCE AND POST-RENAISSANCE STUDIES I.**

123-676A or B RENAISSANCE AND POST-RENAISSANCE STUDIES II.

* **123-679A or B STUDIES IN GREEK AND ROMAN SCULPTURE.**

* **123-682A or B SEMINAR IN THE ART OF BYZANTIUM.**

* **123-685A or B PROBLEMS IN WESTERN MEDIAEVAL ARCHITECTURE AND SCULPTURE.**

123-688A or B STUDIES IN MANUSCRIPT ILLUMINATION.

* **123-691A or B ARTISTIC THEORY IN THE RENAISSANCE.**

* **123-694A or B GREEK MYTHOLOGY IN ITALIAN RENAISSANCE ART.**

* **123-711A or B STUDIES IN THE GRAPHIC ARTS.**

* **123-714A or B RESEARCH IN MODERN ARCHITECTURE: — 1750 TO THE PRESENT.**

* **123-717A or B SEMINAR IN URBAN PLANNING AND TOPOGRAPHY.**

* **123-720A or B STUDIES OF DRAWINGS.**

123-723A or B PROBLEMS IN THE HISTORY OF TASTE AND CRITICISM.

Fourth Year Undergraduate Courses for Which Graduate Credit is Given

123-413D WESTERN MEDIAEVAL PAINTING.

123-430A or B EVOLVING CONCEPTS OF THE DISCIPLINE OF ART HISTORY.

123-440D THE VISUAL LANGUAGE OF ARTISTIC EXPRESSION.

C2 DEPARTMENT OF CLASSICS

STAFF

Professors — P.F. McCULLAGH; ALBERT SCHACHTER
Associate Professors — ANNA FARMAKIDES; J.M. FOSSEY (on leave) M.J. SILVERTHORNE; P.V. TOMASZUK; PAOLO VIVANTE; G.M. WOLOCH
Assistant Professor — G.L. SNIDER *(Chairman)*

NOTE: For detailed information concerning the M.A. and Ph.D. Degrees in Classics, please inquire of the Department of Classics.

GRADUATE COURSES IN CLASSICS

A limited number of courses and seminars is offered each year. Course content is, generally speaking, fitted to the requirements of individual students.

Numbering System for Courses

The second digit after the dash (—) signifies the content of the courses:

1 — Greek Poetry, 2 — Greek Prose, 3 — Latin Poetry, 4 — Latin Prose, 5 — Non-literary, 6 — Non-literary, 7 — Reading Course, 8 — Reading Course.

The third digit signifies the session in which the course is offered, viz. 6 signifies 1976-77.

The following numbers have been reserved for 1976-77. From them the courses to be given in 1976-77 will be chosen. Note that the numbers of courses which are actually given will be followed by the letters A, B, or D, depending on whether they are half or full courses.

114-616 and 716 GREEK POETRY (e.g. drama, lyric).

114-626 and 726 GREEK PROSE (e.g. historians, orators, philosophers).

114-636 and 736 LATIN POETRY (e.g. drama, elegy, epic).

114-646 and 746 LATIN PROSE (e.g. historians, orators, philosophers).

114-656 and 756 NON-LITERARY SUBJECTS (e.g. archaeology, epigraphy, history, religion, philosophy).

114-666 and 766 NON-LITERARY SUBJECTS (e.g. archaeology, epigraphy, history, religion, philosophy).

114-676 and 776 INTENSIVE READING COURSES.

114-686 and 786 INTENSIVE READING COURSES.

In addition, certain courses listed in the Faculty of Arts Announcement may be taken by graduate students, with the permission of the Department.

C3 DEPARTMENT OF ENGLISH

STAFF

Professors — PETER BUITENHUIS: C.D. CECIL *(on leave);* L. DUDEK; JOYCE HEMLOW *(part-time);* ALAN HEUSER; ALEC LUCAS; HUGH MacLENNAN; A.E. MALLOCH; H.A. McPHERSON *(on leave)*
Associate Professors — BHARATI BLAISE; D.F. BOUCHARD; MICHAEL BRISTOL; MARGARET BRUCE *(on leave);* DESMOND COLE; D.C. FRYE; IRWIN GOPNIK; SLAVA KLIMA; P.H. OHLIN, *(Chairman);* P.H.PIEHLER; MARTIN PUHVEL; RONALD REICHERTZ; JOHN RIPLEY; BRIAN ROBINSON; JOSEPH RONSLEY; DARKO SUVIN; B.F. WEEMS III; W.C. WEES; D. WILLIAMS
Assistant Professors — H. ANDERSON; W.T. BOOTH *(Assistant to the Chairman);* ABBOTT CONWAY *(on leave);* M. DAVISON; M. DORSINVILLE; L.T. DUER; L.T. ELLIOTT; C.A.E. HEPPNER; W.P. HILLGARTNER; LEANORE LIEBLEIN; Y. LINDEMAN; D.S. RUBIN; MARC SIMON; M. STENBAEK-LAFON *(on leave)* ROBERT TEMBECK;
Special Lecturer — J. LANGUIRAND

REQUIREMENTS

Applications

Letters of recommendation are required of *all* applicants. Applications close March 31. Completed applications and supporting material for persons seeking Teaching Fellowships should reach the Department by January 31.

The M.A. Degree

Candidates admitted from an Honours program in English (or an equivalent) may complete the degree in one year. Persons with insufficient English courses may apply for a Qualifying year. Further information may be obtained from the departmental office.

The Ph.D. Degree

The number of entrants to the doctoral program is severely limited. Highly qualified applicants are admitted to the first year from an Honours Program in English (or its equivalent). Qualified applicants who have already completed a Master's degree in English are admitted to the second year of the program. Two years are normally devoted to preparation of a comprehensive examination, and a third year to research. The language requirement must be fulfilled before comprehensives may be undertaken.

It is the policy of the Department to urge candidates to complete the Ph.D. program within four years. A candidate intending to submit the thesis to meet the deadline for Spring Convocation must give notice of this intention before January 1. A candidate intending to meet the deadline for Fall Convocation must give such notice before May 1. A detailed description of the program may be obtained from the departmental office; see also section 3 of the Faculty regulations.

COURSES FOR HIGHER DEGREES

The following is a list of courses offered on a rotational basis. A list of courses to be given in 1976-77 will be available from the departmental office.

110-447D CROSSCURRENTS IN 18TH CENTURY ENGLISH AND EUROPEAN LITERATURES. (Prerequisite: A reading knowledge of French).

For 500 level courses, please see the Faculty of Arts Announcement.

110-602A BIBLIOGRAPHY.

110-603B PREPARATORY STUDIES. In 1976-77, the M.A. THESIS.

110-604A OLD ENGLISH LANGUAGE AND PROSE LITERATURE. Prose included in Sweet, *Anglo-Saxon Reader.*

110-605B OLD ENGLISH HEROIC POETRY. Emphasis on *Beowulf* (ed. Klaeber). Open to students who have taken English 110-604A, or its equivalent elsewhere.

110-606A INTRODUCTION TO MIDDLE ENGLISH LITERATURE.

110-608A CHAUCER. The Canterbury Tales.

110-609B CHAUCER. Troilus and Criseyde, and other poems.

110-610A DEVOTIONAL LITERATURE.

110-611D LITERARY CRITICISM.

110-612D THE TRANSITION FROM THE MIDDLE AGES TO THE RENAISSANCE.

110-615D SHAKESPEARE.

110-616D ELIZABETHAN AND JACOBEAN DRAMA.

110-640D THE AMERICAN NOVEL.

110-650D 19TH CENTURY THOUGHT.

110-660D STUDIES IN SCIENCE FICTION.

110-661A SEMINAR.

110-665A STUDIES IN AMERICAN LITERATURE AND INTELLECTUAL HISTORY.

110-670D COMPARATIVE LITERARY STUDIES.

110-671A DESIGNING EFFECTIVE COMMUNICATION.

110-680D CANADIAN LITERATURE.

110-687D INTERMEDIATE RESEARCH SEMINAR.

110-688B STUDIES IN DRAMATIC FORM.

110-689D INTERMEDIATE RESEARCH SEMINAR.

110-690D INTRODUCTORY SEMINAR OF SPECIAL STUDIES.

110-706B MIDDLE ENGLISH LITERATURE. Gawain and the Green Knight (ed. Tolkien and Gordon) and *Pearl* (ed. Gordon).

110-707A THE ARTHURIAN LEGEND.

110-708B ALLEGORY: STUDIES IN A LITERARY MODE.

110-710D RENAISSANCE STUDIES.

110-712A MARLOWE AND ELIZABETHAN TRAGEDY.

110-714A SPENSER AND 16TH CENTURY POETRY.

110-716A SPECIAL STUDIES IN SHAKESPEARE.

110-718B BEN JONSON AND JACOBEAN COMEDY.

110-722D MILTON.

110-724B COMEDY.

110-726A DEFOE AND SWIFT: NARRATIVE PROSE.

110-727B POPE AND THE AUGUSTAN AGE.

110-728A JOHNSON AND HIS CIRCLE: THE LATER 18TH CENTURY.

110-730A WORDSWORTH AND COLERIDGE: ROMANTIC THEORY AND POETRY.

110-731D 19TH CENTURY STUDIES.

110-732A ARNOLD: POETRY AND CRITICISM.

110-733B THE VICTORIAN NOVEL.

110-734A HENRY JAMES: STUDIES IN FICTION.

110-735D SPECIAL STUDIES IN CRITICISM.

110-736D HOPKINS, YEATS, AND ELIOT: MODERN BRITISH POETRY.

110-737A MODERN AMERICAN DRAMA

110-740D STUDIES IN SYMBOLISM.

110-746A THE 19TH CENTURY.

110-756D DRAMA OF THE 20TH CENTURY.

110-757A MODERN DRAMA.

110-760A JAMES JOYCE AND HIS MILIEU.

110-761D 20TH CENTURY NOVELISTS.

110-765D THEORY AND PRACTICE OF TRANSLATION.

110-770D STUDIES IN AMERICAN LITERATURE.

110-775D RECENT AMERICAN AND CANADIAN LITERATURE.

110-776A FILM THEORY.

110-780D ANALOGY AND METAPHOR: STUDIES IN LITERARY FORMS.

110-781D STUDIES IN COMMUNICATIONS.

110-784D LANGUAGE, LINGUISTICS AND LITERATURE.

110-785A STUDIES IN LITERARY THEORY.

110-786D ADVANCED RESEARCH SEMINAR.

110-787D ADVANCED RESEARCH SEMINAR.

110-788D STUDIES IN DRAMATIC FORM.

110-789D ADVANCED SEMINAR OF SPECIAL STUDIES.

COURSES RESTRICTED TO Ph.D. CANDIDATES

110-701D DOCTORAL COMPREHENSIVE EXAMINATION.

110-702D EDITORIAL AND TEXTUAL STUDIES.

110-703D GENRE STUDIES.

110-704D THEMATIC STUDIES.

110-705D PERIOD STUDIES.

110-745D INTRODUCTORY SEMINAR FOR Ph.D. STUDENTS.

Program in Communications

The Graduate Program in Communications offers courses and directs project research in preparation for the M.A. in Communications and the Ph.D. in English (Communications). Two years of residence are normally required for the M.A. and two years of residence for the Ph.D. for those holding a suitable M.A.

The Program is concerned with the study of communications phenomena through an interdisciplinary activity that includes both theoretical and practical considerations of the various modes and media of communication. The program does not provide the purely technical training which can be more appropriately carried out by institutions of technology and communication arts, rather the focus is on broadening the understanding of the interplay between practical needs and theoretical perspectives. The special theoretical interest of the program centres on the nature and scope of human communications as they emphasize the relationship of cognitive, social and aesthetic problems. To this end degree candidates are encouraged to explore these aspects of communication studies by drawing upon the resources of the various departments throughout the university with whom the Program has established close working relations.

Requirements for the M.A. Degree

An Honours Bachelor's degree or equivalent with a Cumulative Grade Point Average of at least 3.0 (out of a possible 4.0) is required of applicants for the M.A. Program. In any case the transcript must show breadth or depth in areas related to the program. Though it normally takes two years to complete degree work, applicants whose undergraduate background is excellent and who perform well during the first term may be able to complete the M.A. in one session and a summer.

Requirements for the Ph.D. Degree

Applicants for the Ph.D. program are normally expected to have done the equivalent of an M.A. in communications or suitable alternative. In exceptional cases candidates with a distinguished M.A. may be admitted to Phase II of the Program. Admission will be based on academic achievement and evidence of talent and strong motivation in communications studies. Applicants should document their experience as an artist, producer, organizer or

researcher in one of the arts media, social or educational fields. Applicants should also be prepared to supply a short statement on their interests and objectives in communication studies.

Courses for the M.A. Degree

109-610D THEORIES OF COMMUNICATION. Examination of a variety of human communication theories including cybernetic models, social interactionist models, semiotic and symbolic forms of analysis, with particular emphasis on the explanation of how theories are linked to various forms of practice and how these, in turn, relate to a general understanding of communication phenomena.

109-615D STAFF-STUDENT COLLOQUIUM. The Staff-student Colloquium is concerned with modes, configurations, and the broad procedures of communication studies. Each semester a major theoretical issue is examined through papers, lectures and discussions in relation to communication practices and to the development of the field.

Related Courses

104-460A,B HISTORY OF SEMANTICS

104-620D CURRENT ISSUES IN SOCIOLINGUISTICS

104-660D PROBLEMS IN THE THEORY OF SEMANTICS

110-671A DESIGNING EFFECTIVE COMMUNICATION

110-776A FILM THEORY

110-784D LANGUAGE LINGUISTICS AND CRITICISM

151-770B THEORETICAL PROBLEMS AND CONCEPTS IN THE STRUCTURE OF CULTURE.

166-622B PROBLEMS IN MASS COMMUNICATIONS.

Inquiries regarding the Program should be addressed to The Director, Graduate Program in Communications, Arts Building, McGill University.

C4 DEPARTMENTS OF FRENCH LANGUAGE AND LITERATURE

STAFF

Professors — G.-P. COLLET (*on leave fall term*); J. ETHIER-BLAIS *(on leave);* J.E.L. LAUNAY
Associate Professors — M. ANGENOT; M.T. CARTWRIGHT; YVONNE CHAMPIGNEUL; GIUSEPPE DI STEFANO *(on leave Winter term);* J.-P. DUQUETTE *(on leave);* FRANCIS FURLAN *(on leave Winter term);* H.C. JONES; RUSSELL G. McGILLIVRAY; J.-C. MORISOT; M. RABOTIN; F.RICHARD; D.W. STEEDMAN *(on leave);* J. TERRASSE; L.C. VAN DELFT; ROBERT VIGNEAULT
Assistant Professors — J.-P. BOUCHER; ISIDA CREMONA; J.-C. LEMYZE *(on leave);* A. MAUGEY; G. PASCAL-SMITH (*on leave*); F. RICARD; Y. RIVARD; ANDRE SMITH (*on leave*); IRENE STAROSTA; A. TICHOUX

REQUIREMENTS

Admission

The Qualifying Year

Promising candidates with gaps in their previous preparation may be admitted to a *Qualifying Year* designed to bring them up to the desired level of competence. Successful completion of a Qualifying Year will secure admission into the M.A. course held in the session following such completion. Only full-time students are admitted to a Qualifying Year.

Graduate Record Examination

All applicants for admission to the Department originating from a College or University in the U.S. must submit *Graduate Record Examination scores.* Applications will not be examined unless this additional information is supplied.

English Requirement

All M.A. and Ph.D. candidates must submit evidence of competence in English, or take a Department test in that language.

Requirements for the M.A. Degree

All full-time M.A. students registering for the first time in September will take 4 full approved courses (or their equivalent).

Degree requirements will be met *in toto* through the submission of a thesis on a topic approved by the Department and researched under the direction of a departmental thesis director. Faculty regulations allow such candidates three years, after completion of their course work, for submission of their thesis. While the thesis is in preparation, candidates must register for each session in September both with the Department and with the Faculty.

Candidates may be admitted to the M.A. course as full-time or half-time students, with appropriate adjustment of fees.

Regulations for the M.A. Degree Taken in the French Summer School

All work carried on towards an M.A. degree in the French Summer School is under the control and supervision of the Department of French in the Faculty of Graduate Studies of the University. For detailed information about courses and regulations, please refer to current *French Summer School Announcement.*

Requirements for the Ph.D. Degree

Minimum admission requirement for the Ph.D. course is a first degree equivalent to a McGill B.A. degree with Honours in French. Applicants should submit to the Department in good time transcripts of college grades and Graduate Record Examination, evidence of their competence in oral and written French, and letters of recommendation.

The program consists of a minimum of three years' work, together with a thesis. A candidate will normally satisfy the requirement for the first year by taking four full courses, or its equivalent. Completion of that program will allow students unable to proceed to the Ph.D. degree to obtain the M.A. degree subsequently.

Candidates holding an M.A. degree in French from a recognized University may be admitted to second year. In that year a student is expected to take four approved graduate courses, or its equivalent.

The Preliminary Examination is normally taken in the third year. Candidates are not permitted to sit that examination before they have passed competence tests in French language, one or two approved foreign languages and, eventually, English. Departmental requirements of special concern to Ph.D. students are obtainable from the departmental Secretariat.

After passing their preliminary examinations, candidates are allowed five years to submit a satisfactory thesis, on a subject approved by the Department and prepared under the direction of a member of the departmental staff. After the thesis has been approved by Faculty appointed examiners, an oral defence must take place in Montreal.

COURSES FOR HIGHER DEGREES

Open to M.A. and Ph.D. Candidates

Subject to Departmental Regulations

125-605A BIBLIOGRAPHIE, MÉTHODES ET OUTILS DE RECHERCHE EN LITTÉRATURE FRANÇAISE.
Staff

125-625B MONTAIGNE.
Professor Crémona

125-633D MOLIÈRE.
Professor van Delft

125-642B LE ROMAN EN FRANCE ET EN ANGLETERRE AU XVIIIe SIÈCLE.
Professor Cartwright

125-643A VOLTAIRE CONTEUR.
Professor Furlan

125-645B LE THÉÂTRE DE MARIVAUX.
Professor Terrasse

125-650A STENDHAL ROMANCIER.
Professor Starosta

125-658A LEMERVEILLEUX QUOTIDIEN DE LAUTRÉAMONT AU DADAÏSME.
Professor Jones

125-660B LE JOURNAL D'ANDRÉ GIDE.
Professor Collet

125-679A L'ESSAI.
Professor Angenot

125-680A LA POÉSIE QUÉBÉCOISE DE 1945 À NOS JOURS.
Professor Maugey

125-682A L'ESSAI QUÉBÉCOIS.
Professor Ricard

125-689B L'ENFANT DANS LE ROMAN QUÉBÉCOIS
Professor Rivard

ADVANCED UNDERGRADUATE COURSES

125-510D TRADUCTION LITTERAIRE.
Professor Launay

125-520D EVOLUTION DE LA LANGUE FRANÇAISE AU CANADA.
Professor Rabotin

OPEN TO QUALIFYING YEAR STUDENTS ONLY

125-550A LECTURES GUIDEES
Staff

125-551B LECTURES GUIDEES.
Staff

Ph.D. Language Tests

For Ph.D. candidates in other departments who require French for research and in satisfaction of the language requirement the following course is offered:

125-004D FRENCH READING COURSE (2 HOURS THROUGHOUT SESSION).
Professor Champigneul

C5 DEPARTMENT OF GERMAN

STAFF

Professor — A. ARNOLD
Associate Professors — M. BIRCHER; V.R. BLOCK; E. GALLATI; T. GOLDSMITH-REBER; A. HSIA; H.J. MAITRE *(Acting Chairman)*; H. RICHTER; J. SCHMIDT; I. SCHUSTER

REQUIREMENTS

In order to be admitted to graduate work in German the candidate must have a B.A. degree with Honours or Joint Honours in German from McGill University, or hold an equivalent degree from another college or university of recognized standing, or have completed a course of studies of equivalent value at such an institution.

Candidates who do not possess these prerequisites may, with special permission, enter the department as qualifying students for the purpose of completing these preliminary studies. In order to be admitted to graduate work in German, the candidate must have

a) considerable fluency in German (all lectures are in German),
b) a good knowledge of German literature from the Baroque period to the 20th century,
c) a good knowledge of the History of the German Language. Students may satisfy this requirement by completing German 129-500A, 129-501B and/or 129-510A, 129-511B during their first graduate year at McGill.

Graduate students holding a Teaching Assistantship or who are otherwise employed will normally not be allowed to take more than four half courses a year. Teaching Assistants are required to attend a seminar on Teaching Methods. If a student's knowledge of English is adjudged inadequate, he may be required to attend an approved course in that language. All graduate students are required to attend, each session, the staff-student colloquium on special problems.

Requirements for the M.A. Degree

At least the equivalent of four full courses must be taken. Students are encouraged to complete one quarter of their course load in another discipline.

Students are not, as a rule, able to earn the M.A. degree in less than two years. They are expected to begin work on their thesis after the end of the first session. The thesis should be roughly 80 to 100 pages in length, should reveal ability to organize the material under discussion, and should be succinct and relevant. After the session in which they complete their course work, students are required to pass a comprehensive examination.

Requirements for the Ph.D. Degree

After completing the B.A. degree with Honours or the equivalent, a student has normally to take the equivalent of eight full courses. After completing the M.A. degree or its equivalent, a student must take at least the equivalent of four full courses. Students are encouraged to complete one quarter of their course load in another discipline.

After the session in which a candidate completes his course work, he will be required to pass a comprehensive examination. Candidates will be required to pass a reading test in one language other than English and German. Usually this language is French, but for those specializing in German Literature before 1600 the test may be in Latin.

Original research leading to new insights is a prerequisite for the acceptance of a Ph.D. thesis. After acceptance of the thesis, the candidate has to defend his thesis before a committee.

As a rule, it will take a candidate at least four years after the B.A. degree to complete the requirements for the Ph.D. degree. Students who have not spent an appreciable length of time in a German speaking country are advised to spend one year at a university in such a country, for which credit may be given in the above program.

COURSES FOR HIGHER DEGREES

Courses are normally given in the form of seminars, and may be rated as full or half courses. Each year, the Department publishes a list of those offerings which will be available in the ensuing session. These lists are available from the departmental Secretary or from the Graduate Faculty office, normally in the month of May.

Each year the Department offers courses in some of the following areas:

129-605-09, 705-09A,B MEDIAEVAL GERMAN LITERATURE.

129-610-14, 710-14A, B GERMAN LITERATURE IN THE AGE OF THE RENAISSANCE AND THE REFORMATION.

129-615-19, 715-19A, B GERMAN LITERATURE OF THE BAROQUE AND ROCOCO.

129-620-24, 720-24A, B GERMAN LITERATURE OF THE ENLIGHTENMENT.

129-625-29, 725-29A, B GERMAN LITERATURE OF THE STURM AND DRANG PERIOD.

129-630-34, 730-34A, B GERMAN CLASSICISM.

129-635-39, 735-39A, B GERMAN ROMANTICISM.

129-640-44, 740-44A, B GERMAN REALISM AND EARLY NATURALISM.

129-645-49, 745-49A, B GERMAN LITERATURE IN THE 20TH CENTURY.

129-650-54, 750-54A, B GERMAN LINGUISTICS AND PHILOLOGY.

129-655-59, 755-59A, B LITERARY THEORY AND CRITICISM.

129-660-64, 760-64A, B COMPARATIVE LITERATURE STUDIES.

129-665-69, 765-69A, B SEMINAR ON TEACHING METHODS.

129-670-74, 770-74A, B STAFF-STUDENT SEMINAR ON LITERARY PROBLEMS.

129-675A, B RESEARCH SEMINAR.

Ph.D. Language Tests

For Ph.D. candidates who are required to pass a reading test in German the following course is offered.

129-004D GERMAN. READING COURSE. (2 hours; *Text:* H. Jannach; *German for Reading Knowledge,* 2nd edition. Van — Nostrand — Reinhold Co.). Method and Practice of Translation. This course is intended for students preparing to fulfil the language requirement for the Ph.D. degree.
Professor Block

C6 DEPARTMENT OF HISPANIC STUDIES

STAFF

Professor — S. LIPP *(Chairman)*
Associate Professors — M. AMASUNO; M. HARVEY; N. MARTINEZ; A. MICHALSKI; V. OUIMETTE; J. SANCHEZ; V. UGALDE-CUESTA

Requirements for the M.A. Degree

In order to be admitted to graduate work in Spanish, the candidate must fulfil the following prerequisites:

a) Candidates must possess a B.A. degree with Honours or in certain cases Joint Honours in Spanish from McGill University, or an equivalent degree from another college or university of recognized standing.
b) Candidates who do not possess the above prerequisites may, with special permission, enter the Department as qualifying students for the purpose of completing these preliminary studies.

Graduate students holding a Teaching Assistantship or who are otherwise employed will normally not be allowed to take more than two full courses a year. If a student's knowledge of English is deemed inadequate, he may be required to attend an approved course in that language.

Candidates must take the equivalent of four full courses. It is strongly recommended that the half course on Methods of Literary Analysis, be taken in the first year. The other courses may be spread over a period of not more than two years.

Within six months after completion of course work, candidates will normally be expected to pass a comprehensive examination, after which they will present a thesis of 80 to 100 pages. (See *Faculty Regulations* for deadlines).

Courses for the M.A. Degree

144-600D M.A. COMPREHENSIVE EXAMINATION.

144-602A METHODS OF LITERARY ANALYSIS.
Professor Martinez

144-610A PHILOLOGY
Professor Harvey

144-612A HISTORICAL SEMANTICS OF THE SPANISH LANGUAGE
Professor Amasuno

144-622B LYRICAL POETRY FROM BERCEO TO GARCILASO
Professor Michalski

144-631B TEATRO DEL SIGLO DE ORO
Professor Ugalde

144-661A ORTEGA Y GASSET
Professor Ouimette

144-663B THE SPANISH NOVEL SINCE THE CIVIL WAR
Professor Amasuno

* **144-680B EL MODERNISMO**
Professor Sánchez

144-690A EL NEGRO EN LA LITERATURA HISPANOAMERICANA
Professor Sánchez

144-691B THE SPANISH AMERICAN NOVEL SINCE WORLD WAR II
Professor Martinez

144-696B SPANISH AMERICAN DRAMA
Professor Harvey

144-697A,B READING COURSE.

144-698A, B READING COURSE.

144-699A, B READING COURSE.

144-790D Ph.D. LANGUAGE REQUIREMENT. (For students in other departments).

*Qualified students wishing to pursue their studies towards a Ph.D. in Spanish should consult the chairman of the Department.

C7 INSTITUTE OF ISLAMIC STUDIES

STAFF

Professors — C.J. ADAMS *(Director);* AHMAD ABU-HAKIMA; A. BIJLEFELD *(on leave);* DONALD P. LITTLE *(Assistant Director)*
Associate Professors — ISSA J. BOULLATA; WADI HADDAD; HERMANN LANDOLT; RICHARD N. VERDERY
Research Associate — MEHDI MUHAQQIQ
Librarian — MUZAFFAR ALI
Specialist Librarians — JERZY GUTKOWSKI; JAN WERY HO

The Institute offers courses, and undertakes to direct research in preparation for the M.A. and Ph.D. degrees in Islamic Studies. Two years of resident study are normally required for the M.A. degree, five for the Ph.D. degree.

The Institute is concerned with the faith of Muslims, and with the Islamic tradition involving the society and the civilization to which it gave rise and to which it is currently related. The Institute's special emphasis is on the faith as a contemporary and living force; and on the major changes through which the civilization and society are currently going. It would seek such understanding as will enable outsiders to observe those changes intelligently, Muslims to participate in them intelligently, and both to communicate.

From September 1975, a joint cooperative program became effective between the Duncan Black Macdonald Center for the Study of Islam and Christian-Muslim Relations of the Hartford Seminary Foundation, and the Institute of Islamic Studies. The program is conducted on the McGill campus. Three faculty members from the Hartford Seminary Foundation joined the staff of the Institute.

Candidates for degrees in Islamic Studies may, with the consent of those departments, be permitted or required to take relevant courses offered by the Departments of History, Economics and Political Science, Philosophy, Comparative Religion, etc. In special cases these departments also recognize participation in relevant courses offered by the Institute as contributing to their own advanced degrees. Such participation by students from other departments is welcomed by the Institute.

The Institute stresses competence in language. At the master's level, one Islamic language is required, normally Arabic. For doctorate work, all students, Muslim and Western, must have a reading knowledge of *either* French or German, preferably both, (for access to Western scholarship on Islam) *and* two Islamic languages, of which one will normally be Arabic.

COURSES FOR HIGHER DEGREES

397-602D SURVEY OF ISLAMIC PHILOSOPHY. (3 hours). A history of the attempts of Muslim thinkers to adapt Greek philosophy to Islamic revelation; study of the Translation Movement, the Mu'tazila, and the rise of Kalam; readings in al-Kindi, al-Farabi, Ibn Sina, Ibn Rushd, al-Razi, and other important Muslim philosophers.

397-603A INTRODUCTION TO RESEARCH MATERIALS FOR ISLAMIC STUDIES. (1 hour). A practical introduction to the materials academically available for these studies. Some preliminary discussion of research methods, of the preparation of reports and essays; documentation; transliteration. Particular attention is given to the special reference books and serials used in the field.
Mr. Ali

397-604D INTRODUCTION TO THE ISLAMIC TRADITION. (3 hours). A course to introduce the uninitiated student to major aspects of the Islamic tradition: Jahiliyah times, the Prophet, Qur'an, Hadith, Kalam, Shari'ah, Falsafah, Tasawwuf, Shi'ah and the sects, Institutions, and Modern Developments. Emphasis is given to the principal Islamic and Western sources in each of these areas.
Professor Adams

397-605D ARABIC LITERATURE: A.D. c500-1970s. (3 hours). A survey of the literature of the Arabs in pre-Islamic times with special emphasis on the *mu'allaqat*. Developments following the rise of Islam and its influence on literary production in prose and poetry, emphasizing selected poets and writers and considering new themes, genres, and thought in the Umayyad and the 'Abbasid periods. A condensed treatment of Arabic literature between the fall of Baghdad in 1258 and the Napoleonic war in the Middle East, and a more detailed study of the Arab literary renaissance in the nineteenth century and the development of fiction, drama, and poetry in the twentieth century. No knowledge of Arabic is required for this course. Use will be made of available English translations.

* **397-610D HISTORY OF ISLAMIC CIVILIZATION: THE CLASSICAL PERIOD.** (3 hours). The origins of the early Islamic state in Arabia and the Umawi Caliphate. The growth of an Islamic civilization, and the 'Abbasi Empire until the Seljuk period. The rise of the Fatimis. The Caliphate of Cordoba.
Professors Little and Verdery

397-611D HISTORY OF ISLAMIC CIVILIZATION: THE MEDIAEVAL PERIOD. (3 hours). The Seljuks, and the mediaeval synthesis. The Moors in Spain and North Africa. The Crusades. The Mongols and the destruction of the Baghdad Caliphate. The Mamluk, Persian, Turkish and Indian Empires until 1700.
Professor Little

397-613D HISTORY OF ISLAMIC CIVILIZATION: THE LATER ISLAMIC EMPIRES. The rise and growth of the Ottoman, Safavid and Mughal Empires. Their intellectual and cultural life. Relevant successor states to the end of the 18th century.

* **397-614D THE HISTORY OF ISLAMIC INDIA.** The Arabs in India; the establishment of the Delhi Sultanate; the interaction of Islam and Hinduism. The Mughals: political history; social, intellectual, and religious trends. The fall of the Mughals and the end of Muslim rule in India.

397-621D INTRODUCTORY ARABIC.

397-622D LOWER INTERMEDIATE ARABIC.

397-623D HIGHER INTERMEDIATE ARABIC.

397-625D ADVANCED ARABIC. (3 hours). Critical reading of texts in a particular field; for example, readings in the historians, with Professor Little; or in the theologians, in connection with Islamics 702 below, or the legists, in connection with Islamics

706. As the content may vary, this course may be repeated for credit.

397-631D INTRODUCTORY TURKISH.

397-632D LOWER INTERMEDIATE TURKISH.

397-633D HIGHER INTERMEDIATE TURKISH.

397-634D ADVANCED TURKISH. (This course will normally be related to Islamics 722 below; Prerequisite: Islamics 397-622D or 397-641D).

397-641D INTRODUCTORY PERSIAN.

397-642D LOWER INTERMEDIATE PERSIAN.

397-643D HIGHER INTERMEDIATE PERSIAN.

397-644D ADVANCED PERSIAN. (Prerequisite: Islamics 397-622D).

397-651D INTRODUCTORY URDU.

397-652D LOWER INTERMEDIATE URDU.

397-653D HIGHER INTERMEDIATE URDU.

397-654D ADVANCED URDU. (Prerequisite: Islamics 397-622D or 397-641D).

* **397-670D ISLAMIC ART AND ARCHITECTURE.** Study of the development of Islamic art and architecture as related to the principles of Islam as a religion and regional traditions.

397-700D Ph.D. PRELIMINARY EXAMINATION IN ISLAMICS. RESEARCH SEMINAR. For all students writing theses and all others engaged in research. (Seminar 2 hours).
Professor Adams and Staff

Several of the following seminars will be given each year.

397-702D ISLAMIC THEOLOGY: SEMINAR ON A SPECIAL QUESTION. (2 hours). The problem considered will vary from year to year. The course may, therefore, be repeated for credit.

397-703D READING IN CLASSICAL ARABIC PHILOSOPHERS. (Seminar 2 hours). Consideration of the development of philosophic thought among the Muslims, and its relation to the late Greek background; with special reference to Ibn Sina (Avicenna). Some of his writings, especially the *Kitab al-Najat,* or al-Ghazzali's *Tahafut,* will be read in Arabic. The prose of *falsafah* in classical Islamic culture and thought.

* **397-704D ISLAMIC THEOLOGY.** (Seminar, 2 hours). A study of significant aspects of the Muslims' attempt to give intellectual expression to their faith in different periods in the past.

* **397-705D THE SOCIAL INSTITUTIONS OF ISLAM I.** Government and State. (Seminar 2 hours). A survey of the evolution of the various patterns and concrete manifestations of Muslim political theory and practice through the classical and mediaeval periods of Islamic history. The rise of modern states and political problems in various Muslim countries.

* **397-706D THE SOCIAL INSTITUTIONS OF ISLAM II.** Law. (Seminar 2 hours). The role of law in Islamic thought and society, considered historically in terms of its theological, political, and sociological aspects. The impact of modern legal systems and ideas, contemporary movements of codification, and the problems of legislation.

* **397-708D QUR'ĀN EXEGESIS**(Seminar, 2 hours). A study of two or three suras taken as units, and of a number of Qur'ānic passages and key words. Attention will be given to issues of style, form and chronology, as well as to the content matter; the latter including a consideration of the history of the interpretation of these sections. The suras and passages considered will vary from year to year.

* **397-710D SHI'AH THOUGHT.** (Seminar 2 hours). A history of thought among the Shi'ah with consideration of important thinkers, movements and books.

* **397-721D ISLAMIC DEVELOPMENTS IN THE MODERN ARAB WORLD.** (Seminar 2 hours). Internal reform movements and responses to external pressure, 1800 to the present.

* **397-722D THE DEVELOPMENT OF SECULARISM IN MODERN TURKEY.** (Seminar 2 hours). An analysis of the transition from Ottoman institutions and ideas to those of contemporary Turkey. After considering the 18th century attempts at reform, attention is given to the changes during the *Tanzimat,* "Young Turk", and Republican periods, as a preparation for an understanding of contemporary problems raised by secularization.

* **397-723D ISLAMIC DEVELOPMENTS IN MODERN INDIA AND PAKISTAN.** (Seminar 2 hours). Significant movements in Islamic thought and political action, since the Mughul downfall. The influence of Sirhindi; Waliyullah and his school; the Mujahidin; 1857. De'oband; aligarh; Azad and Muslim participation in Indian nationalism; Iqbal; Pakistan. The Munir Report; Pakistan constitutional and ideological issues; Muslims in India since partition.

* **397-724D DEVELOPMENT OF THE ISLAMIC TRADITION IN INDONESIA.** (2 hours). Pre-Islamic background. The arrival of the Islamic tradition; Javanese elements in its development, and Hukum Adat. Muslim states versus the Dutch company; the Padri war. Islamic policy of the Dutch. Recent Islamic movements and political parties (Sarekat Islam, Muhammadijah, Masjumi, Nahdatul Ulama, Persatuan Islam, M.I.A.I., etc.). Nationalism.

* **397-725D THE ISLAMIC HISTORY OF WEST AFRICA.** (2 hours). A study of an Islamic role in the development of institutions and ideas in the western and central Sudan, from the 11th century to the present day with special reference to (i) relations with the wider Muslim World, (ii) sources, literary and archaeological, for a study of this area.

* **397-726D ISLAMIC DEVELOPMENTS IN MODERN IRAN.** (2 hours).

397-727D MODERN HISTORY OF THE GULF STATES. The history of the Arabian Peninsula in modern times with special emphasis on the Gulf States. Concentration will be on Saudi Arabia, Kuwait, Bahrain, Qatar, the Union of the Arab Amirates, and 'Uman from the 18th century to the present.
Professor A. Abu-Hakima

397-728D ISLAMIC DEVELOPMENTS IN MODERN NORTH AFRICA. The relationship of the Maghrib to the Muslim East and Europe in mediaeval and modern times. Religious developments in North Africa before and after European conquest. The growth of nationalism in Libya, Tunisia, Algeria and Morocco. The interaction of Arab and French culture and its effect on Islam.

397-729D ISLAM AND THE WEST. (Seminar, 2 hours). Muslim views of the 'West' — especially Christianity — and the 'Western' views of Islam from the ninth until the nineteenth century, with particular attention to extant primary sources.

* **397-730B THE STUDY OF ISLAM IN EUROPE AND NORTH AMERICA SINCE THE EARLY 19TH CENTURY.** (2 hours). A critical study of the extent to which cultural and ideological trends in the West since the early 19th century are reflected in and have influenced Western academic descriptions and interpretations of Islam.

397-731D ISLAM IN THE MODERN WORLD. (Seminar 2 hours). A conspectus of the Islamic world's response to the internal decline in the eighteenth century and external encroachment in the nineteenth. A comparative study of constitutional developments, religious reform movements, nationalism, etc.
Professor

397-735A SPECIAL TOPICS

397-736B SPECIAL TOPICS

397-746D THE MYSTICAL TRADITION OF ISLAM (SUFISM). (Seminar 2 hours). An historical and analytical study of great Sufis, their writings and their central problems. Emphasis will be laid upon reading Sufi texts in Arabic and Persian. As the content of the course will vary, this course may be repeated for credit.
Professor Landolt

397-760D MUSLIM HISTORIOGRAPHY. (Seminar 2 hours). Readings in historical writings and consideration of the critical problems arising from the use of such materials.
Professor Little

397-761D IRAN FROM THE MONGOLS TO THE SAFAVIDS. (Seminar 2 hours). Historical developments in Iran, Iraq and Anatolia after 1258. The Ilkhanids and post-Mongol successor "states". The Turkman dynasties: Qara-Goyunlu. Shi'ism, Sufism, and the rise of the Safavids in 1500.

397-762D MODERN ARABIC LITERATURE. (Seminar, 2 hours). A study of the trends in Arabic poetry since the beginning of the modern Arab literary renaissance, with special sttention to selected poets from the neo-classical, the romantic, and the realist schools of the twentieth century, and a consideraton of changes in poetic form leading from traditional metrical designs to free verse and prose-poems. An examination of the development of the Arabic novel and short story in the twentieth century, with attention to fictional techniques and to selected themes as expressions of the social and ideological change in the modern Arab world. A knowledge of Higher Intermediate or Advanced Arabic is required.

* **397-777A ISLAMIC PHILOSOPHY.** (Seminar, 3 hours). Consideration of the development of philosophic thought among the Muslims. Classical Arabic writings will be used.

C8 DEPARTMENT OF ITALIAN LANGUAGE AND LITERATURE

STAFF

Professor — A. D'ANDREA *(Chairman)*
Associate Professors — MICHELANGELO PICONE, PAMELA D. STEWART

REQUIREMENTS

The B.A. degree with Honours or Joint Honours in Italian as granted by McGill University or its equivalent constitutes the minimum requirement. Applicants who do not have this prerequisite may be accepted for a Qualifying Year.

Requirements for the M.A. Degree

The general Faculty regulations concerning the M.A. degree, as stated in sections 4 and 6 of the Announcement, apply.

One year of course work and a thesis are required. As a rule, students must take three full approved courses, of which one will be Italian 132-680D (Seminar on Literary Problems). After they have completed their course work, students are required to pass a comprehensive examination.

Course work, the comprehensive examination and the thesis must show that students have an unquestionably sound knowledge of the language, that they are familiar with all periods of the literature and have a first-hand knowledge of the major literary works, and that they have developed the skills necessary to carry out scholarly research.

Courses for the M.A. Degree†

132-360D SEMINAR ON ITALIAN STYLISTICS AND COMPOSITION.

132-461A DANTE: The Divine Comedy.

132-462B PETRARCH AND PETRARCHISM.

* **132-464B MACHIAVELLI:** The Prince.

132-605B HISTORY OF THE ITALIAN LANGUAGE. Origins and development of the Italian language with a discussion of relevant texts.

132-610B BIBLIOGRAPHY OF ITALIAN LITERATURE. An introduction to the methods of research in the study of Italian Literature with a survey of the basic bibliographic apparatus. A half course, generally required of all students.

132-620A HISTORY OF LITERARY CRITICISM. Major trends in Italian literary criticism with a discussion of outstanding works of criticism.

132-630A PROBLEMS IN TEXTUAL CRITICISM. An introduction to the methods of establishing a critical text with examples taken from Italian literature.

132-640D ITALIAN LITERATURE AND THE WESTERN CULTURAL TRADITION. A study of certain aspects of Italian literature in relation to the literatures of other Western countries.

132-680D SEMINAR ON LITERARY PROBLEMS. Staff-Student discussions of particularly important and difficult texts. A full course, compulsory for all students.

† Qualified students wishing to pursue their studies towards a Ph.D. in Italian should consult the chairman of the Department.

C9 DEPARTMENT OF LINGUISTICS

STAFF

Professors — C.D. ELLIS *(Chairman);* A.A. RIGAULT
Associate Professors — MYRNA GOPNIK; D. LIGHTFOOT; M. PARADIS
Assistant Professors — G.L. PIGGOTT; I. BELLERT; N. DOMINGUE
Sessional Lecturer — G.R. TUCKER (Associate Professor, Department of Psychology)

REQUIREMENTS

Admission

Candidates must hold a B.A. degree with Honours or Joint Honours in Linguistics as granted by McGill University, or its equivalent. Applicants may be required to submit to an examination in order to determine their competence. If in the judgment of the department the student has not reached the expected level of competence, he may be required to take a Qualifying Year and/or attend a summer institute of linguistics. The final date for acceptance by the Department of applications for graduate study is March 1.

Requirements for the M.A. and Ph.D. Degrees

1. **Degree of Master of Arts.** The M.A. degree requires one year of course work of not less than three approved full courses, a comprehensive evaluation covering two areas of the field not covered in course work (see below 104-601D) and a thesis. Minimum admission requirement is normally a first degree equivalent to a McGill B.A. degree with Honours in Linguistics. Promising candidates with gaps in their preparation may be admitted to a *Qualifying Year* and /or advised to attend a summer institute of linguistics.

2. **Degree of Doctor of Philosophy:**
   a) Candidates holding a B.A. degree with Honours in Linguistics will, upon admission, follow a program of at least three years. This will include three full courses and comprehensive Evaluation I (see below 104-601D) to be completed before the beginning of the second year, two further full courses and Comprehensive Evaluation II (see below 104-701D) to be completed before the beginning of the third year and a doctoral thesis, research for which will normally occupy the third year.
   b) Candidates holding a McGill M.A. in Linguistics and who, in the judgment of the Department, possess the qualifications of Ph.D. candidates will follow a further two-year program approved on an individual basis by the Department. This will include not less than two approved, full courses, a second comprehensive evaluation (see below 104-701D), to be successfully completed before beginning work on the thesis, and a doctoral thesis, research for which will normally occupy the second of the two years required for the program.
   c) Candidates holding an M.A. in Linguistics from a recognized university upon admission to McGill must follow a program of at least two years, including not less than three approved full courses, Comprehensive Evaluations I and II (see below 104-601D and 104-701D) and a doctoral thesis, research for which will normally occupy the second of the two years required for the program. (Two half courses may be counted as the equivalent of one full course in paragraphs a) b) and c) above.

COURSES FOR HIGHER DEGREES

Graduate Courses

104-601D M.A. COMPREHENSIVE EVALUATION. (Two presentations).

104-610D EXPERIMENTAL PHONETICS. Speech as a motor behaviour and as an acoustical phenomenon. Speech perception. Experimentation in the Phonetics Research Laboratory.
Professor Rigault

104-620D CURRENT ISSUES IN SOCIOLINGUISTICS. An examination of the methodological and theoretical issues raised in the study of linguistic variation, including field methods, quantitative analysis, refinements in linguistic theory, and implications for language change.
Professor Domingue

140-630A GENERATIVE PHONOLOGY. The course is concerned with a critical evaluation of the theory of phonology expounded in Sound Pattern of English. We will examine various proposals to modify this theory both in the direction of constraining and of increasing its power. Among the issues to be covered are the following: (a) problems of lexical representation, (b) ordering of phonological rules, (c) the segmental cycle in phonology, (d) derivational constraints (i.e., rule conspiracies and global conditions on rules).
Professor Piggott

104-631B ISSUES IN GENERATIVE PHONOLOGY. This seminar is oriented towards current issues in phonological theory. We will devote some discussion to the notion of *explanation* in phonology; to the treatment of morphology in a generative grammar and its consequences for phonological theory. We will examine some alternatives to the standard theory of generative phonology such as the recent proposals from Natural Generative Phonology.
Professor Piggott

104-640A PROBLEMS IN HISTORICAL LINGUISTICS. Problems in the history (attested) or prehistory (reconstructed) of languages, illustrating linquistic change as change of some part of a generative grammar.
Professor Piggott

104-641B ISSUES IN HISTORICAL LINGUISTICS. Implications of historical change for formal synchronic grammars.
Professor Piggott

* **104-660D PROBLEMS IN THE THEORY OF SEMANTICS.** An investigation of various theories of semantics (e.g., those of Frege, Tarski, Wittgenstein, Austin, Chomsky, Katz, Lakoff) with particular attention to the assumptions each theory makes about what it must explain and the kinds of evidence which it accepts.
Professor Gopnik

104-670D RESEARCH METHODS IN PSYCHOLINGUISTICS. (Also listed as Psychology 204-455). Various research approaches which have been used by psychologists and linguists will be critically evaluated. Later each student will select and conduct a major research project which he will discuss with other seminar members during the course of the year. The use of basic, relevant methodological tools will be reviewed and the effects of experimenter expectancy will be discussed. Seminar, no lectures. **Professor Tucker**

104-680D THEORETICAL FOUNDATIONS OF LANGUAGE TEACHING METHODS. A critical analysis of the various competing methods, an investigation of the implicit principles behind each, and an examination of whether and/or how the explicit principles are implemented. A look at the basic assumptions shared by some or all, and an identification of the specific characteristics of each.
Professor Paradis

104-701D Ph.D. COMPREHENSIVE EVALUATION.

104-750D LINGUISTIC THEORY. A study of the metatheoretical bases of theories. We will look at what constitutes evidence and explanation in linguistics and the criteria which can be used for deciding among alternate hypotheses and alternate theories. In addition we will try to establish the kinds of evidence which could count as a refutation of a hypothesis or a theory and the types of revision which various theories allow. We will also look at the ways in which formalisms interact with evidence and the ways in which competing theories can interact.
Professor Gopnik

104-760A SYNTAX AND SEMANTICS I. Developments in lexicalist syntax and semantic interpretation rules. Particular emphasis on 'trace theory' and the notion of enriching surface structure to make it the sole basis for semantic interpretation rules.
Professor Lightfoot

104-761B SYNTAX AND SEMANTICS II. Historical change in syntactic systems, viewed from a transformational generative perspective. Implications for linguistic theory. Particular emphasis on changes in the base component and evidence for a syntactic 'opacity principle' predicting such changes.
Professor Lightfoot

* **104-770D PROBLEMS OF LANGUAGE CONTACT.** The influence of one language on another in the performance of individuals and in the history of speech communities. The sociocultural setting for bilingualism, the measurement of bilingual behaviour and national language planning.
Professor Domingue

104-780A SELECTED TOPICS I.

104-781B SELECTED TOPICS II.

104-782A SELECTED TOPICS III.

104-783B SELECTED TOPICS IV.

104-784D SELECTED TOPICS V.

104-786D SELECTED TOPICS VI.

Advanced Undergraduate Courses

Students deficient in certain areas may be required to take some of the following *undergraduate courses* in addition to full graduate courses.

104-350A GENERAL PHONETICS.

104-351B PHONOLOGY.

104-360A THEORY OF MORPHOLOGY AND SYNTAX.

104-361B SEMINAR IN MORPHOLOGY AND SYNTAX.

104-400A THEORY AND METHODS OF HISTORICAL LINGUISTICS.

104-401B SEMINAR IN HISTORICAL LINGUISTICS.

104-450A GENERATIVE PHONOLOGY.

104-461B ADVANCED SYNTAX.

104-471B FIELD METHODS OF LINGUISTICS.

104-482D FIELD OR RESEARCH PROJECT.

104-490A SEMINAR IN LINGUISTIC THEORY.

104-491B ADVANCED SEMINAR IN LINGUISTIC THEORY.

C10 MUSIC

STAFF

Professors — M. DUCHOW; B. HAMBRAEUS; K. JONES

Associate Professors — P. HELMER; A. LANZA; R. LAWTON; B. MATHER; B. MINORGAN. D. MORTON; P. PEDERSEN (Dean)

Assistant Professors — B. CHERNEY; R. GIBSON; J. GREW; P. MARKS; E. PLAWUTSKY; J. REA; J. SCHMALFELDT; J. SIMONS

PROGRAMS

Graduate study in the Faculty of Music is available in four areas: (a) Composition, (b) Musicology, (c) Performance, and (d) Theory. The Master of Musical Arts Degree is offered in all four areas. Interdisciplinary studies involving Musicology or Theory are encouraged. The Doctor of Music degree is offered in Composition. A limited number of teaching assistantships are available. Inquiries should be directed to the Chairman, Department of Theory, Faculty of Music.

ADMISSION

Applicants for the M.M.A. degree must hold a B.Mus. in the area of specialization or a B.A. degree with major or honours in music including considerable work done in the area of specialization. Applicants to the Composition, Musicology, and Theory programs are requested to submit samples of work done in their special area. They may also be required to take placement tests in Analysis, History, and Theory. Applicants found to be deficient in any area may be required to take certain undergraduate courses. A reading knowledge of German is strongly recommended as a prerequisite for graduate work in Musicology. All applicants to the Performance program who do not hold the Honours degree in Performance from this University will be required to pass an Entrance Audition. Only those applicants who clearly demonstrate the potential to become professional performers on their instruments will be admitted to the program.

Applicants for the D.Mus. degree must hold an M.M.A. in composition, or its equivalent, and must submit scores and/or tapes of their compositions at the time of application.

REQUIREMENTS FOR THE M.M.A. DEGREE

In all programs a minimum number of formal courses are prescribed. The student's major work is expected to be thesis research, composition or performance which will be done under the supervision of an advisor. This work, as well as any additional courses and/or individual study which the department considers necessary, constitutes the central part of this program.

The M.M.A. degree normally requires one year for applicants who have the equivalent of this University's B.Mus. with Honours in the area of specialization.

Composition

(a) 219-631A and 219-632B Seminar in Twentieth Century Music.
(b) One approved full course elective.
(c) Language reading examination in one of: French, German, or Italian.
(d) Thesis Composition. The candidate will be required to attend regular composition tutorials.

Musicology

(a) 219-680A and 219-681B. Seminar in Musicology.
(b) Language reading examinations in German and one additional language related to the candidate's field of research.
(c) The candidate will be required to attend regular tutorials.
(d) Thesis. The candidate will undertake supervised research leading to a thesis which will be an investigation in depth in some specialized field of musicology.

Performance

(a) 219-690A and 219-691B. Seminar in Performance Practice

(b) 219-697A and 219-698B. Performance Tutorial
(c) One full Graduate Course elective: to be selected from those offered by the Faculty of Music
(d) Requirements for Keyboard and Guitar: Performers: 219-660D. Solo Recital, 219-661D. Chamber Music Recital
(e) Requirements for Orchestral Instrument: Performers: 219-662D. Solo and Chamber Music Recital, 219-663A/B. Orchestra 219-664A/B. Chamber Music Ensemble
(f) Requirements for Singers: 219-665D. Voice Recital I 219-666D. Voice Recital, II

Theory

(a) 219-654A and 219-655B.Seminar in Music Theory.
(b) Language reading examination in one of: French, German, or Italian.
(c) The candidate will be required to attend regular tutorials.
(d) Thesis. The candidate will undertake supervised research leading to a thesis which will be an investigation in depth in some specialized field of music theory.

REQUIREMENTS FOR THE D.MUS. DEGREE

(a) 219-722D. Doctoral Composition Tutorial (for two years).
(b) Two approved full course electives.
(c) 219-701D and 219-702D. Comprehensive examinations.
(d) Composition Performance. The candidate must present a concert of his/her compositions.
(e) Thesis: A musical composition of major dimensions together with a written analysis of the work. The thesis must be defended in an oral examination.

Details concerning the comprehensive examinations, composition, performance, thesis, and academic regulations are available from the Secretary, Graduate Committee, Faculty of Music.

A minimum of two years' residence is required beyond the M.M.A. in composition, or its equivalent.

COURSES FOR HIGHER DEGREES

Graduate Courses

219-622D COMPOSITION TUTORIAL.
Staff

219-623A ELECTRONIC MUSIC SEMINAR I. (3 hours seminar, 4 hours studio work).
Professor Hambraeus

219-624B ELECTRONIC MUSIC SEMINAR II. (3 hours seminar, 4 hours studio work).
Professor Lanza

* **219-625D MUSIC NOTATION SEMINAR.** (3 hours).
Professor Hambraeus

219-631A SEMINAR IN TWENTIETH CENTURY MUSIC. (3 hours).
Professor Mather

219-632B SEMINAR IN TWENTIETH CENTURY MUSIC. (3 hours).
Professor Mather

219-641A ADVANCED COUNTERPOINT I. (2 hours).
Professor Jones

219-642B ADVANCED COUNTERPOINT II. (2 hours).
Professor Jones

219-649D THEORY TUTORIAL.
Staff

* **219-652D COMPUTER APPLICATIONS IN MUSIC.** (3 hours).
Professor Pedersen

* **219-653B MUSIC AESTHETICS AND CRITICISM.** (3 hours).

219-654A SEMINAR IN MUSIC THEORY. (3 hours).
Professor Hambraeus

219-655B SEMINAR IN MUSIC THEORY. (3 hours).
Professor Rea

219-660D SOLO RECITAL.

219-661D CHAMBER MUSIC RECITAL.

219-662D SOLO AND CHAMBER MUSIC RECITAL.

219-663A/B ORCHESTRA.

219-664A/B CHAMBER MUSIC ENSEMBLE.

219-665D VOICE RECITAL I.

219-666D VOICE RECITAL II.

219-679D MUSICOLOGY TUTORIAL.
Staff

219-680A SEMINAR IN MUSICOLOGY. (3 hours).
Professor Minorgan

219-681B SEMINAR IN MUSICOLOGY. (3 hours).
Professor Duchow

219-690A SEMINAR IN PERFORMANCE PRACTICE. (3 hours).
Professor Helmer

219-691B SEMINAR IN PERFORMANCE PRACTICE. (3 hours).
Professor Helmer

* **219-692A SEMINAR IN MUSIC LITERATURE.** (3 hours).

* **219-693B SEMINAR IN MUSIC LITERATURE.** (3 hours).

219-697A and 219-698B PERFORMANCE TUTORIAL.

219-701D D.MUS. COMPREHENSIVE EXAMINATION, PART I.

219-702D D.MUS. COMPREHENSIVE EXAMINATION, PART II.

219-722D DOCTORAL COMPOSITION TUTORIAL.
Staff

Advanced Undergraduate Courses

Students deficient in certain areas may be required to take some of the following undergraduate courses in addition to their required graduate courses.

211-322D TONAL COUNTERPOINT.

211-323D MODAL COUNTERPOINT.

211-327D ANALYSIS (19TH CENTURY).

214-380A MEDIAEVAL MUSIC.

214-381A RENAISSANCE MUSIC.

214-382B BAROQUE MUSIC.

214-383A CLASSICAL MUSIC.

214-384B ROMANTIC MUSIC.

214-385B TWENTIETH CENTURY MUSIC.

214-394B SPECIAL TOPIC SEMINAR.

211-427D ANALYSIS (20TH CENTURY).

211-522D FUGUE.

211-523D ADVANCED HARMONY.

211-529D PROSEMINAR IN MUSIC THEORY.

214-489B HISTORY OF MUSIC THEORY.

214-496B HONOURS TUTORIAL.

214-499D PROSEMINAR IN MUSICOLOGY.

215-428A TWENTIETH CENTURY PERFORMANCE PRACTICE.

C11 DEPARTMENT OF PHILOSOPHY

STAFF

Professors — H.M. BRACKEN; M. BUNGE; A.T. McKINNON *(Chairman)*; J.A. TRENTMAN
Associate Professors — R. STORRS McCALL; D.F. NORTON *(on leave)* ; J. ROBINSON; W. SHEA; J.D.B. WALKER
Assistant Professors — G. DI GIOVANNI; ANIL K. GUPTA; WARREN HARVEY; J. McGILVRAY

REQUIREMENTS

Admission

Before entering upon a course of graduate studies, a student will normally have completed an Honours B.A. in Philosophy, or its equivalent, that is, a degree for which he or she has devoted one third to one half of his curriculum to philosophy.

The applicant's competence in the subject should include the following:

(1) A general knowledge of the history of Western philosophy, Greek, Mediaeval, Modern.
(2) A systematic knowledge of the main philosophical disciplines in their contemporary as well as historical contexts: logic, ethics, epistemology, and metaphysics.
(3) An ability to present, in written form, clear and substantial reconstruction and analysis of the materials normally studied in the areas mentioned in (1) and (2).

To demonstrate their competence in these areas applicants must submit transcripts of academic work, three letters of recommendation from persons with whom they have studied, and at least one substantial example (approximately 15-20 typewritten pages) of their written philosophical work. In addition, applicants whose first language is English are required to submit scores (Aptitude Test only) of the Graduate Record Examination. Applications and supporting documents should be submitted by March 15.

Requirements for the M.A. Degree

A program consistent with the requirements specified in the Faculty Regulation will be arranged for each student. This will include at least six full courses, or the equivalent, during the first year.

Requirements for the Ph.D. Degree

Students entering the Ph.D. program will follow a course of studies decided upon in consultation with their Advisory Committees. Each Ph.D. student will complete courses on diverse aspects of philosophy, and prepare for oral Comprehensive Examinations in 1) Epistemology and Metaphysics; 2) Some area to be decided in consultation with the student's Advisory Committee and 3) History of Philosophy. Competence in Logic must also be demonstrated, either by written examination or by completion, with a grade of 'B' or higher, of a course approved by the Department. These examinations are to be taken at the beginning of the student's third year in the program.

The special interests of each student will be taken into account when his or her course of studies is decided, and examination papers are decided upon. In addition, all candidates must pass reading

examinations in two (approved) languages other than their mother tongue. As soon as the Comprehensive Examinations are passed, the student will begin work on a dissertation. Dissertation topics must be selected within the research areas in which the Department can provide proper supervision, and within the linguistic competence of the student.

Students who enter the program without an M.A. degree or previous graduate work may be expected to complete such a degree before being advanced to the Ph.D. program.

COURSES FOR HIGHER DEGREES

The Department of Philosophy has renumbered many of its courses. To avoid possible confusion at registration old numbers are shown in brackets.

107-210A INTRODUCTION TO DEDUCTIVE LOGIC. (3 hours). Propositional and predicate logic: formalization of arguments, truth tables, natural deduction and more.
Professor Gupta

107-210B INTRODUCTION TO DEDUCTIVE LOGIC.
Professor McCall

107-500A (107-581A) METAPHYSICS, DIALECTICS, LOGIC AND EPISTEMOLOGY.

107-501B (107-582B) METAPHYSICS, DIALECTICS, LOGIC AND EPISTEMOLOGY. Topic for 1976-77: Modal semantics: semantics for modal logic, deontic logic (the logic of obligation and permission) tense logic, and the logic of events.
Professor McCall

107-502A (107-585A) METAPHYSICS I.

107-503B (107-586B) METAPHYSICS II. Topic for 1976-77: Time. A discussion of several philosophical issues concerning time, including becoming, tensed versus tenseless descriptions, and the relative versus absolute debate
Professor McGilvray

107-504A (107-517D) PROBLEMS IN SEMANTICS I. The structure of languages. Signs and constructs. Predicates and propositions, the problem of the existence of constructs. The designation relation. The reference classes of predicates, propositions and theories. The representation relation. Do factual theories represent? The concept of intension. A calculus of intensions. Philosophical controversies over the problem of designations, reference, representation and intension. Conventionalism, Platonism, psychologism, empiricism, and realism.
Professor Bunge

107-505B (101-517D) PROBLEMS IN SEMANTICS II. Continuation of Phil. 504A. The sense of a construct. Purport and import. Total sense and factual sense. Interpretation of a sign system. Formal interpretation and factual interpretation. Truth: formal, factual and philosophical. Truth, probability, and testability. Extension. Vagueness. Definite description. Philosophical controversies over the problem of sense, interpretation, and truth. Extensionalism, nominalism, pragmatism, Platonism, realism, etc. The relations of logic and semantics to ontology and science.
Professor Bunge

107-510B INTERMEDIATE LOGIC. Metatheory of propositional and predicate logic; deduction theorem, completeness theorem, etc. Elementary number theory; Godel's incompleteness theorem (if time permits).
Professor Gupta

* **107-511D MEDIAEVAL LOGIC AND GRAMMAR.**

* **107-520D METHODOLOGY AND PHILOSOPHY OF SCIENCE.**

* **107-522A (107-523A) FORMAL METHODS IN PHILOSOPHY AND SOCIAL SCIENCE I.**

* **107-523B (107-524B) FORMAL METHODS IN PHILOSOPHY AND SOCIAL SCIENCE II.**

* **107-528A (107-527A) PHILOSOPHY OF PHYSICS I.**

* **107-529B (107-528B) PHILOSOPHY OF PHYSICS II.**

* **107-526D (107-445D) SCIENCE AND PHILOSOPHY IN THE 17TH CENTURY.**

107-530A (107-404D) MORAL PHILOSOPHY. Topic for 1976-77: Individual and Society.
Professor Walker

* **107-532A (107-531A) SEMINAR IN PHILOSOPHY OF RELIGION I.**

* **107-533B (107-532B) SEMINAR IN PHILOSOPHY OF RELIGION II.**

* **107-538D (107-401D) SEMINAR IN THE HISTORY OF ETHICS.** Not given in 1976-77.

107-548A LEGAL AND MORAL PHILOSOPHY OF THE JEWISH TRADITION I.
Professor Harvey

107-549B LEGAL AND MORAL PHILOSOPHY OF THE JEWISH TRADITION II.
Professor Harvey

107-550A (107-541A) SEMINAR IN ANCIENT PHILOSOPHY. Topic for 1976-77: Aristotle: *De Anima.*
Professor Trentman

* **107-551B (107-542B) SEMINAR IN ANCIENT PHILOSOPHY.**

* **107-522D THEMES IN THE HISTORY OF JEWISH PHILOSOPHY.**

* **107-560A (107-555A) SEMINAR IN THE 17TH AND 18TH CENTURY PHILOSOPHY.**

107-561B (107-556B) SEMINAR IN 17TH AND 18TH CENTURY PHILOSOPHY. Topic for 1976-

77: Seventeenth century theories of mind.
Professors Trentman and Bracken

* **107-562D (107-544D) SEMINAR IN THE HISTORY OF PHILOSOPHY.**

107-564A (107-565D) SEMINAR IN KANT I. Selected topics in the philosophy of Kant.
Professor DiGiovanni

* **107-565B (107-565D) SEMINAR IN KANT II.**

107-566D (107-558D) SEMINAR IN HEGEL. Topic for 1976-77: The Phenomenology of Mind.
Professor Robinson

* **107-568D (107-563D) SEMINAR IN KIERKEGAARD.**

* **107-570A (107-513A) RECENT AND CONTEMPORARY BRITISH PHILOSOPHY**

* **107-571B (107-514B) RECENT AND CONTEMPORARY BRITISH PHILOSOPHY**

* **107-580A (107-587A) SEMINAR IN PROBLEMS OF PHILOSOPHY.**

* **107-581B (107-588B) SEMINAR IN PROBLEMS OF PHILOSOPHY.**

107-588A (107-583A) SEMINAR IN SYSTEMATIC PHILOSOPHY. Topic for 1976-77: Themes in Philosophy of Logic.
Professor Gupta

* **107-589B (107-584B) SEMINAR IN SYSTEMATIC PHILOSOPHY.**

107-590A (107-593A) SEMINAR IN PHILOSOPHY. Topic for 1976-77: Spinoza: *Principles of Cartesian Philosophy*. (Spinoza's interpretation of Descartes and the foundation of his own philosophical system.)
Professor Shea

107-591B (107-594B) SEMINAR IN PHILOSOPHY. Topic for 1976-77: Spinoza: *Ethics*.
Professor Shea

107-699D GRADUATE SEMINAR (3 credits) An advanced graduate seminar for Ph.D. and M.A. students writing their dissertations.
Professor McGilvray

107-705D GUIDED RESEARCH IN ETHICS.

107-710D GUIDED RESEARCH IN LOGIC.

107-720D GUIDED RESEARCH IN PHILOSOPHY OF SCIENCE.

107-730D GUIDED RESEARCH IN PHILOSOPHY OF RELIGION.

107-740D GUIDED RESEARCH IN ANCIENT PHILOSOPHY.

107-750D GUIDED RESEARCH IN MEDIAEVAL PHILOSOPHY.

107-760D GUIDED RESEARCH IN HISTORY OF PHILOSOPHY.

107-770D GUIDED RESEARCH IN PHILOSOPHY OF POLITICS.

107-780D GUIDED RESEARCH IN EPISTEMOLOGY AND METAPHYSICS.

Several courses primarily philosophical in content are available in other departments. Note in particular the offerings in Classics, Jewish Studies, and the Islamics Institute.

C12 RELIGIOUS STUDIES

STAFF

Professors — J.C. McLELLAND *(Dean)*; C.J. ADAMS; S.B. Frost; G. JOHNSTON; J.C. KIRBY
Associate Professors — J.A. BOORMAN; R.C. CULLEY; D.J. HALL; D.N. MacMILLAN; H.K. MARKELL; M. PEASTON; D.R. RUNNALLS; R.W. STEVENSON
Assistant Professors — E.K. MALLOY
Lecturer — Katherine K. Young

REQUIREMENTS

Requirements for admission to the courses leading to the degrees of M.A., S.T.M. and Ph.D. are stated in the General Information and Faculty Regulations section of this Announcement. Further information is given in the *Announcement of the Faculty of Religious Studies*.

COURSES FOR HIGHER DEGREES

The staff offers each session a selection from the following list of courses, and is prepared to guide students in thesis research on approved topics, within any of the following fields: Old Testament language and literature; New Testament language and literature; Church History; Comparative Study; Christian Theology, including Theological Ethics; Philosophy and Psychology of Religion. To each approved student appropriate courses will be assigned, on occasion including courses offered by other Departments such as Education (Catholic Theology), Art History, Philosophy, History, Classics, Jewish Studies, or Islamic Studies. Graduate students in these Departments may be permitted or required to take courses currently offered in Religious Studies.

Adequate library facilities are available in the William and Henry Birks Building and elsewhere in the University for the courses listed, and for research.

All are half-courses unless otherwise noted.

A course may not be offered if fewer than six students register.

Area A (Biblical)

* **260-602A JEREMIAH TO MALACHI; THE DECLINE OF PROPHECY.**
Professor S.B. Frost

260-603B THE DANIEL APOCALYPSE.
Professor S.B. Frost

260-604B THE ROOTS OF EARLY JUDAISM.
Professor D.R. Runnalls

260-605B INTERPRETERS OF THE RELIGION AND FAITH OF ANCIENT ISRAEL.
Professor R.C. Culley

260-607A STUDIES IN THE BIBLICAL NARRATIVE TRADITIONS.
Professor R.C.Culley

260-608A STUDIES IN THE PSALMS.
Professor S.B. Frost

260-610A RECENT INTERPRETATIONS OF MARK.
Professor J.C. Kirby

260-612A THE PASSION NARRATIVE IN THE FOUR GOSPELS.
Professor J.C. Kirby

260-613B NEW TESTAMENT ETHICS.
Professor G. Johnston

260-614B THE GOSPEL OF JOHN.
Professor G. Johnston

260-615B THE HOLY SPIRIT IN THE NEW TESTAMENT.
Professor G. Johnston

260-616A LES PARABOLES DE JESUS.
Professor J.C. Kirby

260-617C THE EPISTLE TO THE EPHESIANS.
Professor J.C. Kirby

260-618B THE CHURCH IN THE NEW TESTAMENT.
Professor G. Johnston

260-619B THE RESURRECTION IN THE NEW TESTAMENT.
Professor J.C. Kirby

Area B (Historical)

260-620A WORSHIP IN THE NEW TESTAMENT.
Professor J.C. Kirby

260-621A ROMAN CATHOLICISM FROM 1870 TO THE PRESENT.
Professor H.K. Markell

260-622B THE MODERN LITURGICAL MOVEMENT.
Professor J.C. Kirby

260-623A THE ECUMENICAL MOVEMENT.
Professor H.K. Markell

260-624A THE CHURCH AND THE CITY IN THE ANGLO-AMERICAN WORLD SINCE 1850.
Professor H.K. Markell

* 260-625B CANADIAN CHURCH HISTORY.
Professor H.K. Markell

260-628B ANGLICANS AND NONCONFORMISTS IN NINETEENTH CENTURY ENGLAND.
Professor H.K. Markell

* 260-630B PHILOSOPHY AND THEOLOGY.
Professor J.C. McLelland

260-631A THE THEOLOGY OF THE CROSS.
Professor D.J. Hall

260-638A THE THEOLOGY OF D.M. BAILLIE.
Professor D.N. MacMillan

260-639B CONTEMPORARY CATHOLIC THEOLOGY.
Professor E.K. Malloy-Hanley

Area C (Philosophy)

260-641A RELIGION AND THE ARTS.
Professor J.C. McLelland

260-642B PHILOSOPHY OF RELIGION IN THE 20TH CENTURY.
Professor J.C. McLelland

* 260-643A PROBLEMS IN PHILOSOPHY OF RELIGION.
Professor J.C. McLelland

* 260-644A THE MEANING AND BASIS OF RELIGIOUS BELIEF.
Professors J.C. McLelland and A. McKinnon

* 260-645B MEANING AND INTERPRETATION.
Professors R.C. Culley, J.C. Kirby and J.C. McLelland

260-660B DIMENSIONS OF THE PERSON.
Professor M. Peaston

* 260-661A HUMAN NATURE IN THEOLOGICAL AND PSYCHOLOGICAL PERSPECTIVE.
Professor M. Peaston

* 260-662B RELIGION AND PERSONALITY: THE FORMS OF LOVING.
Professor M. Peaston

260-663A BEHAVIOUR CHANGE AND PERSONAL GROWTH.
Professor M. Peaston

* 260-664B ANXIETY AND FAITH.
Professor M. Peaston

260-670A REPRESENTATIVE SOCIAL THOUGHT IN THE TWENTIETH CENTURY.
Professor J.A. Boorman

260-671B CHRISTIAN SOCIAL RESPONSIBILITY: SOME MAJOR ISSUES.
Professor J.A. Boorman

Area D (Comparative Study)

* **260-650D RELIGIONSWISSENSCHAFT: THE HISTORY OF THE DISCIPLINE.**
Professor W.A. Bijlefeld

260-656B STUDIES IN THE BHAGAVADGITA.
Professor R.W. Stevenson

397-604D THE ISLAMIC TRADITION.
Professor C.J. Adams

397-652D LOWER INTERMEDIATE URDU
Professor C.J. Adams

397-703D READING IN CLASSICAL ARABIC PHILOSOPHERS.

SPECIAL STUDIES

260-680A/680B/690D OLD TESTAMENT.

260-681A/681B/691D NEW TESTAMENT.

260-682A/682B/692D HISTORY OF CHRISTIANITY.

260-683A/683B/693D CHRISTIAN THEOLOGY.

260-684A/684B/694D PHILOSOPHY OF RELIGION.

260-685A/685B/695D ETHICAL PROBLEMS.

260-686A/686B/696D RELIGIOUS PSYCHOLOGY.

260-687A/687B/697D COMPARATIVE RELIGION.

These are tutorial courses designed to meet the research needs of individual students at Master's or Doctor's level in the various disciplines.

RELATED COURSES

With the consent of the Dean of Religious Studies and the instructor concerned, graduate students may choose related courses in any other Department of the University. They may also take 40% of their courses in other Quebec universities.

C13 DEPARTMENT OF RUSSIAN AND SLAVIC STUDIES

STAFF

Professor — J.G. NICHOLSON *(Chairman)*
Visiting Professors — J. Y LE GUILLOU; R.V. PLETNEV
Associate Professors — P.M. AUSTIN; A.V. FODOR
Assistant Professors — LUDMILA BAUER; IRENE PAVILANIS

REQUIREMENTS

Original research work and the scholarly qualities of the thesis are the principal criteria for conferring a graduate degree in Russian. Two distinct fields of graduate work are recognized — Russian language and Russian literature respectively. It is expected that most students will enter the literary field with a minority showing research interest in philology and linguistics. However, both groups are appropriately provided for.

The general rules of the Faculty apply and are outlined in the first part of this announcement in the Section under — "The Degree of Master of Arts" — and in the Section under — "Regulations for the Degree of Doctor of Philosophy (Ph.D.)." The minimum academic requirement is normally a high standing in Honours Russian. Further, the Department must be convinced that the candidate for admission has an aptitude for research work and will be able to make an original contribution to knowledge. The Department will usually require candidates to demonstrate a useful reading knowledge, for research purposes, of at least one other Slavic language. In addition a knowledge of French and, preferably, also German, is desirable. Any necessary preparation to fulfil these requirements will be offered within the Department or elsewhere at McGill. On a reciprocal basis certain graduate courses may be taken by arrangement at the Université de Montréal.

Requirements for the M.A. and Ph.D. Degrees

Details of the requirements for the M.A. and Ph.D. degrees may be obtained by applying directly to the Chairman of the Department.

COURSES FOR HIGHER DEGREES

141-601D M.A. COMPREHENSIVE EXAMINATION.
Staff

141-610D CHURCH SLAVONIC.
Professor Pavilanis and Staff

141-620D SECOND SLAVIC LANGUAGE AND CIVILIZATION.
Professor Nicholson and Staff

141-630D EARLY HISTORY OF THE SLAVIC LANGUAGES.
Professor Nicholson

141-640D THE BALTO-SLAVIC HYPOTHESIS.
Professor Pavilanis

141-650D HISTORY OF THE RUSSIAN LANGUAGE.
Professor Nicholson

141-660D PRE-PETRINE RUSSIAN LITERATURE.
Professor Pletnev

141-670D RUSSIAN LITERATURE OF THE 18TH CENTURY.
Professor Pletnev

141-680D SEMINAR ON SPECIAL AUTHORS OF THE 19TH CENTURY.
Professor Pavilanis and Staff

141-681D SEMINAR ON RUSSIAN ROMANTICISM.
Professor Austin and Staff

141-690D DEVELOPMENT OF RUSSIAN LITERARY CRITICISM.
Professor Fodor and Staff

141-700D Ph.D. PRELIMINARY EXAMINATION.
Staff

141-701D Ph.D. COMPREHENSIVE EXAMINATION.
Professor Nicholson and Staff

141-710D SEMINAR ON THE Ph.D. COMPREHENSIVE EXAMINATION.
Professor Fodor and Staff

141-720D FIRST SEMINAR ON SPECIAL TOPICS.
Professor Nicholson

141-721D SECOND SEMINAR ON SPECIAL TOPICS.
Professor Fodor and Staff

141-722D THIRD SEMINAR ON SPECIAL TOPICS.
Professor Pavilanis and Staff

Ph.D. Language Tests

For Ph.D. candidates in other departments who require Russian for Research and in satisfaction of the language requirement the following courses are offered.

141-212D RUSSIAN READING COURSE. (3 hours, both terms). This course enables the student to use written Russian as a useful research tool.
Staff

141-790 RUSSIAN AS A LANGUAGE REQUIREMENT FOR THE Ph.D. See "Ph.D. Language Tests" and consult the Department.

McGill University

Faculty of
Graduate Studies and Research
1976 — 77

Section "D"
Medical and Allied Sciences

NOTE: Courses marked with an asterisk (*) are not offered in 1976-77. The letters, which form part of course numbers, have the following significance:
A — Fall term course
B — Winter term course
L — Summer session part I course
C — Summer session part II course
D — Full session course (Fall and Winter terms)

The official McGill University mailing address is:
McGill University, P.O. Box 6070, Station A
Montreal, Quebec, Canada H3C 3G1

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GRADUATE STUDIES & RESEARCH IN THE MEDICAL SCIENCES

1. Departments wholly located in the Faculty of Medicine may accept as candidates for research degrees those who have received the M.D. or equivalent degree. A candidate who does not have the M.D. or equivalent degree may be accepted if a suitable schedule of course work is included as part of his or her graduate education program. Departments located partly in the Medical and partly in the Arts and Science Faculties may accept as candidates for basic science research degrees students who have an Honours or major Bachelor's degree or its equivalent.

2. A candidate for a research degree in a clinical department will be required to give evidence of above-average ability.

3. A candidate for the M.Sc. research degree in a clinical department will be recommended to the Graduate Faculty by the Dean of the Faculty of Medicine. This recommendation will be based on a review of proposals of candidates by the Graduate Study Committee of the appropriate clinical departments. The candidate must fulfil his or her program of course work and present a thesis acceptable to the Graduate Faculty.

4. A candidate for the Ph.D. research degree in a clinical department will be recommended to the Graduate Faculty by the Dean of the Faculty of Medicine. This recommendation will be based on a review of proposals of candidates by the Graduate Study Committee of the appropriate clinical departments. If, in addition to the M.D. degree, he or she possesses the M.Sc. degree of this University or its equivalent, he or she will be required to spend two years in the Graduate Faculty in academic residence. He or she must fulfil his or her program of course work and present a thesis acceptable to the Graduate Faculty.

5. The Graduate Studies Medical Committee supplies the Dean of the Graduate Faculty in October of each year with a list of those members of the Medical Faculty who are authorized to be directors of the graduate students in the departments of the Medical Faculty.

Inquiries concerning research in the clinical aspects of medicine may be in the first instance directed to:

Associate Dean for Graduate Studies and Research
The Faculty of Medicine
McGill University
3655 Drummond Street
Montreal, Quebec
H3G 1Y6

6. Inquiries concerning research and higher degrees in Dentistry should be directed to: The Dean, Faculty of Dentistry, Strathcona Anatomy and Dentistry Building, McGill University.

D1 DEPARTMENT OF ANATOMY

STAFF

Professors — Y.W. CLERMONT *(Chairman)*; C.P. LEBLOND; D.G. OSMOND
Associate Professors — B.M. KOPRIWA; P.K. LALA; D. LAWRENCE; N.J. NADLER; H. WARSHAWSKY
Assistant Professors — G.C. BENNETT; J.J.M. BERGERON; J.R. BRAWER; E. DANIELS; M.F. LALLI; H.J. MONIÉ; C.E. SMITH; M. WEINSTOCK; W.E. WILSON
Lecturers — L. HERMO; S. MILLER; J. WARD; P. WELLS

REQUIREMENTS

The Department offers programs leading to the degrees of Master of Science and Doctor of Philosophy in Anatomy. The aim of the program is to train individuals to be teachers and research workers in the Anatomical Sciences, including Human Anatomy, Histology, Embryology and Neuro-Anatomy. The research facilities offered by the Department include all aspects of anatomy with emphasis on microscopic anatomy and cell biology.

For registration as a graduate student, the candidate must hold a B.Sc., D.D.S or M.D. degree or any equivalent degree, as judged by the Faculty, and must have displayed general proficiency in biological studies. Letters of recommendation are required for all applicants.

For M.Sc. and Ph.D. degrees, the student must complete a series of courses, selected to suit individual requirements. In addition, Ph.D. candidates will write a comprehensive examination after the end of the second year. Ph.D. candidates are also required to pass reading examinations in one, or two, languages other than English, as prescribed by the Departmental Chairman upon registration. For both degrees, the major emphasis is placed on the conduct of original research and the preparation of a thesis.

The Departmental Program Includes:

504-462D DYNAMIC HISTOLOGY. An advanced course to cover topics such as cell cycle, cell population kinetics and turnover of cell components.

504-481B HUMAN EMBRYOLOGY AND DEVELOPMENT. A comprehensive study of human developmental anatomy.

504-533D EXPERIMENTAL MORPHOLOGY. A lecture and practical course on the use of experimental techniques applicable to morphological research. This course stresses methods currently used in the Department, such as radioisotopic tracers, radioautography, light and electron microscopy.

504-614D HUMAN ANATOMY. A complete dissection of the human body is integrated with the anatomy course of lectures, tutorials and audiovisual presentations designed for medical students. This course includes developmental, surface and radiological anatomy.

504-622B NEURO-ANATOMY. This is part of a joint course including Neuro-anatomy Neuro-physiology and Neuro-chemistry.

504-663D HISTOLOGY. The study of the cytology and structure of tissues and organ. Course designed for medical students.

504-701D Ph.D. COMPREHENSIVE EXAMINATION.

504-723D ADVANCED NEURO-ANATOMY. Seminar course at the Montreal Neurological Institute.

D2 DEPARTMENT OF BIOCHEMISTRY

STAFF

Professors — A.F. GRAHAM *(Chairman);* M.J. FRASER; E.A. HOSEIN; D. RUBINSTEIN; S. SOLOMON; T.L. SOURKES; J.H. SPENCER; L.S. WOLFE

Associate Professors — R. BLOSTEIN; P.E. BRAUN; D.T. DENHARDT; R.M. JOHNSTONE; A.R. WASSERMAN *(on leave)*

Assistant Professors — E.M. HARPUR; R.E. MacKENZIE; E.A. MEIGHEN; S. MILLWARD; W. MUSHYNSKI

Emeritus Professor — K.A.C. Elliott

Lecturer — M.R. REESAL

Research Associates — P.J. DOLPHIN; K. HARBERS

Associate Members — M.K. BIRMINGHAM *(Psychiatry);* L.F. CONGOTE *(Exp. Medicine);* J. DUPRE *(Exp. Medicine);* D. EDWARD *(Exp. Surgery);* W.C. GALLEY *(Chemistry);* L. GOODFRIEND *(Exp. Medicine);* L.M. JERRY *(Exp. Medicine);* H. PAPPIUS *(Exp. Neurochemistry);* J.F. PERDUE *(Lady Davis Institute);* C. SCRIVER *(Paediatrics);* J. SHUSTER *(Exp. Medicine)*

REQUIREMENTS

Students must submit with their application for admission the results of the Graduate Record Examination (aptitude test, and achievement test in Biology or Chemistry), three letters of recommendation and a brief resumé indicating their particular field of interest for graduate study.

Students who have satisfactorily completed an Honours course in Biochemistry and who have been accepted as research students by the Department and by a research director approved by the Department may register for the M.Sc. degree, which usually involves a two-year program. Following completion of one year of study in the Department, suitable candidates may be allowed to proceed directly to the Ph.D. degree, depending on the ability they display in research and course work.

The program of courses for each student is determined by the individual research director in consultation with the Chairman of the Department's Graduate Advisory Committee. Students who have not obtained a suitable Honours degree or its equivalent will be required to take a qualifying year or otherwise make up for deficiencies.

Candidates who have obtained the M.Sc. degree with satisfactory standing from this department or who have completed an acceptable M.Sc. program at another university enter the graduate program at the Ph.D. level.

Research work is carried on in the Department laboratories where projects deal with the biochemistry of erythrocytes, liver, brain, muscle, chloroplasts, endocrine organs, nucleic acids, peptides, lipids, and transport phenomena. These projects are conducted in departmental laboratories, the Biochemistry Laboratories of the Allan Memorial Institute of Psychiatry, the Laboratory of Experimental Neurochemistry of the Montreal Neurological Institute, the University Clinics of the Montreal General and the Royal Victoria Hospitals and in certain other laboratories.

There is no second language requirement for Ph.D. students, except where individual research directors wish to make such a requirement for their own students. Students whose mother tongue is not English must be proficient in English and may be required to take a remedial English course if the research director deems this necessary.

COURSES FOR HIGHER DEGREES

Graduate Level Courses

507-602A TOPICS IN MOLECULAR BIOLOGY. (Admission by permission of instructor only).
Professors Fraser and Millward

507-503B IMMUNOCHEMISTRY. (Admission by permission of instructor only).
Professors Shuster and Jerry

(University Clinic, Montreal General Hospital; University Clinic, Royal Victoria Hospital)

Advanced Undergraduate Courses

507-302D METABOLISM AND REGULATION. (Prerequisite: Biology 177-201D; Corequisite: Biology 177-301A, 302B).
Professors Rubinstein, Johnstone and Staff

507-404B BIOPHYSICAL CHEMISTRY. (Prerequisites: Chemistry 180-204A, 214B or 213A, 223B required; Chemistry 180-313A recommended. This course is also listed as Chemistry 180-404B).
Professors Meighen and Galley (Chemistry)

507-450A PROTEIN STRUCTURE AND FUNCTION. (Prerequisites: Biochemistry 507-302D and/or sufficient organic chemistry
Professors Fraser and Meighen

507-454A NUCLEIC ACIDS. (Prerequisite: Biochemistry 507-302D or permission of the instructor
Professors Denhardt and Spencer

* **507-455B NEUROCHEMISTRY.** (Prerequisite: Biochemistry 507-302D).
Professors Sourkes, Wolfe and Staff

507-456B BIOCHEMISTRY OF MEMBRANES. (Prerequisites: Biochemistry 507-302D; Chemistry 180-214B or equivalent, or by consent of the instructors). *Offered in alternate years, commencing 1976-77.*
Professors Braun and Blostein

SEMINARS

There are three series of seminars. The *Research Seminar* consists of a presentation by the student of the background, experimental approach, and significance of his or her proposed research. This seminar is required of all M.Sc. students in the department who plan to proceed to the Ph.D. degree as well as by students entering at the Ph.D. level. The *Thesis Seminar* consists of a presentation by every third or later year Ph.D. candidate on his or her research. *Departmental Seminars* consist of presentations by members of the staff and visiting scientists outlining their work with their collaborators. Graduate students are required to attend all the above seminars and certain informal seminars, and are encouraged to attend relevant scientific meetings.

D3 BIOMEDICAL ENGINEERING UNIT

STAFF

Associate Professors — J.S. OUTERBRIDGE *(Director);* M.C. MACKEY
Assistant Professors — R. DEMERS; H.C. LEE; D.H. MOSCOVITCH; J.L. NEAL
Lecturers — T.R. FENTON; J. IVES; R. POULSEN; C.J. THOMPSON

The Unit provides opportunities for students from various backgrounds to pursue interdisciplinary studies in Engineering and Medicine. This program has been structured mainly for engineers, but applicants from the biological and medical sciences are encouraged. Graduate students for the M.Sc., M.Eng., and Ph.D. degrees will be registered in the Faculty of Graduate Studies and Research through appropriate departments.

Current research in the Unit is concerned with neuromuscular control, especially in posture and eye movement: physiology of vestibular, auditory and mechano-receptors: neural communication theory: diagnostic techniques and signal processing in otology, encephalography and cardiology: sensory aids: computer applications in medicine and medical research.

Opportunities for biomedical engineering research also exist in a number of departments in the Faculties of Engineering and Medicine.

COURSES FOR HIGHER DEGREES

Note that all courses are not given every year.

399-611B BIOLOGICAL CONTROL SYSTEM THEORY. (3 lectures, second term). Control system structure and information flow: homeostasis and neuromuscular systems; neuromuscular control, locomotion, oculomotor system, respiration, the human operator, thermo-regulation, cardiovascular control, endocrine control systems; adaptive and optimizing control structure and theory, performance criteria; growth, positive feedback and mutual causality.

399-613B SENSORY COMMUNICATION THEORY. (3 lectures, second term). Sensory receptors and neural coding; signal transmission and aspects of information processing in the vestibular, auditory, and visual systems; neural modelling; methods of pulse frequency modulation; analysis of multi-unit multipath neural systems; information processing in theoretical neural networks. Student projects.
Professor Lee

399-621A ENGINEERING BIOPHYSICS. (3 lectures, first term). Biochemical thermodynamics; criteria for equilibrium; phase equilibrium; chemical reaction equilibrium; the equilibrium constant, electro-chemical cell potentials, ATP degradation;

chemical kinetics; fluid flow; mass transfer; biological role of water; bio-macromolecules; proteins, nucleic acids, polysaccarides, polyelectrolytes; biological effects of ionizing radiation; buffers, osmotic pressure, acid-base balance.
Professor Neal

* **399-622B ENGINEERING BIOPHYSICS.** (3 lectures, second term). Membranes: structure, electrical properties, passive transport, active transport; models of membrane; nerve conduction. Biological control at molecular level. Microscopy. X-Ray diffraction. Radioactivity. Biophysical instrumentation and measurements.

399-623B PRINCIPLES OF MEDICAL SCIENCE. (2 lectures, second term. Prerequisite: Physiology 552-211D or equivalent). This course is designed to acquaint engineers with the principles and techniques of clinical practice and research, emphasizing those areas where bio-engineering may contribute. Sessions are held in the McGill-associated hospitals, each led by a medical specialist. Specialized areas studied include: diagnosis; iron metabolism; ECG's, pacemakers and intensive-care cardiac units; respiratory function, disease and xenon measurements; artificial dialysis; general and orthopaedic surgery.
Staff

399-631B BIOMEDICAL ENGINEERING TECHNIQUES AND INSTRUMENTATION. (3 lectures, second term). Selected topics in the area of application of technology, systems theory and computer science to problems in health care. The level of presentation will assume adequate mathematical and technological background, including differential equations, transform techniques, basic instrumentation and computer programming. The material presented in this course changes every year allowing in-depth exploration of different areas of biomedical engineering activity. Major areas of interest are: methods of bio-signal analysis, computer evaluation of ECG, industrial engineering methods in hospitals, computer applications in clinical laboratories and intensive care units, health information systems. Structured student projects are part of this course.
Staff

399-641A SYSTEM CONCEPTS AND COMPUTER APPLICATIONS FOR BIOLOGY AND MEDICINE. (2 lectures, 2 laboratories, first term). Basic concepts and methods necessary for the application of computer and system techniques in physiology and medicine. The course is designed to enable the life scientist to utilize recent practical and theoretical advances in engineering and data analysis. In the laboratories, participants will be given the opportunity to use various computers and work on particular problems of their choice.

D4 DENTISTRY

STAFF

Professors — E.R. AMBROSE; K.C. BENTLEY *(Director — Oral Surgery)*; J. deVRIES; H. ROSEN *(Director — Prosthodontics)*.

Associate Professors — R.F. HARVEY; R.G. JONES; D. KEPRON; J.J. McCARTHY; E.P. MILLAR; B. SEDLEZKY; J.W. STAMM; J.D. TOWNSEND.

Assistant Professors — N. DIBAI; G.L. FREEDMAN; D.S. SHAPIRO

REQUIREMENTS

Admission

Candidates for admission into the M.Sc. program must hold a D.D.S. or D.M.D. or its equivalent from an accredited institution and will normally be graduates of above average ability. In addition, those seeking admission must be eligible as training candidates in a hospital dental department as set down by the Order of Dentists of Quebec.

Diploma (Restorative Dentistry)

This program provides the student with a year of valuable experience in selected phases of restorative dentistry but does not prepare him for the practice of a specialty. This 12 month program begins in September and consists of lectures, seminars, case presentations, and the supervised treatment of clinical cases. Direct enquiries to Dr. H. Rosen, Faculty of Dentistry.

M.Sc. (Oral Surgery)

A residency training program in Oral Surgery has been developed to provide students with a comprehensive background for the practice of Oral Surgery as a specialty. During the three years of the program the candidate will serve as a first year resident, second year resident and third year resident. During this time he will be given increasing responsibility for the care of in-patients and out-patients, as well as being required to fulfill certain basic science courses and other assignments. A research project must be commenced in the second year of the program and continued throughout the third year, followed by a Master's thesis.

The program commences July 1 and comprises three years. One candidate per year may be admitted. Direct enquiries to Dr. K. C. Bentley, Faculty of Dentistry.

M.Sc. (Prosthodontics)

The program provides the candidate with advanced training sufficient for the practice of a specialty. Courses are designed to cover the following disciplines: Operative dentistry, fixed and removable prosthodontics, occlusion and gnathology, endodontics, periodontics, and relevant basic sciences.

Comprehensive case documentation and treatment planning forms the basis of the selected clinical treatment which is carried out under the supervision of the staff. The program incorporates a research component which must be completed and presented in the form of a master's thesis prior to the awarding of the degree. The program commences July 1 and comprises a minimum of 26 months. Direct enquiries to Dr. H. Rosen, Faculty of Dentistry.

COURSES FOR HIGHER DEGREES

590-602D ADVANCED RESTORATIVE DENTISTRY I.

590-603D ADVANCED RESTORATIVE DENTISTRY II.

590-604D OCCLUSION & CLINICAL GNATHOLOGY.

590-605A STATISTICAL METHODS & PROTOCOL FORMULATION IN DENTAL RESEARCH.

590-606D GRADUATE DENTISTRY SEMINARS.

590-607D BASIC SCIENCE TOPICS.

D5 DEPARTMENT OF EPIDEMIOLOGY AND HEALTH

STAFF

Professors — R.O. OSEASOHN *(Chairman);* M.R. BECKLAKE; S.S. LEE; F.D.K. LIDDELL; A.D. McDONALD; J.C. McDONALD

Associate Professors — D.G. BATES; D.D. DAUPHINEE; L. DAVIGNON; S. DUCIC; G.W. GIBBS; A.S. MACPHERSON; P.V. PELNAR; N. STEINMETZ; T. TAYLOR

Assistant Professors — M. ARHIRII; N. BOYD; G. EYSSEN; F.R. FENTON; R. FLETCHER; S. FLETCHER; J. HOEY; I. HOROWITZ; J.W. LELLA; J.G. LOHRENZ; J.-C. MARTIN; B. PLESS; S.H. SHAPIRO; J.W. STAMM

Lecturers — D.C. BEWS; T. GERMANSON; H. GHEZZO; A.K. PATERSON; B. POLLAK; R. WEST; F.M. WHITE

REQUIREMENTS

Admission

Candidates should either be medical or dental graduates or hold a bachelor's degree in a relevant subject. M.Sc. candidates must hold at least a B.Sc. with second class Honours or equivalent, and those for the Ph.D. must hold an acceptable Master's degree or equivalent.

Diploma

A course of study in community health sciences of one academic year. Students must complete at a satisfactory level or be exempted from eight half courses. In addition, each student is expected to undertake a project investigation and write a report on it.

M.Sc.

Candidates must pass examinations in (or be exempted from) 8 approved half courses or otherwise pass a comprehensive general examination. The student must thereafter submit a thesis on an approved subject of research in epidemiology, community health, environmental health, occupational health, health care evaluation or medical statistics.

Ph.D.

After at least one year's instruction, training and direction, the student must satisfy the Department of his or her knowledge of the particular subject studied and of the general field of epidemiology. To this end, students may be required to take some or all of the courses listed below. The candidate must, no earlier than a year after this comprehensive examination, submit a thesis on an approved subject in epidemiology, community health, environmental health, occupational health, health care evaluation or medical statistics.

COURSES FOR HIGHER DEGREES AND DIPLOMA

513-010D PRINCIPLES OF DATA PROCESSING IN HEALTH SCIENCES. Lectures, demonstrations and supervised practical work covering: basic data handling on unit-record devices, use of statistical packages, McGill computing resources and procedures and introduction to programming and basic systems analysis, and discussion of wider applications of computers in medicine.

513-602A PRINCIPLES OF HEALTH STATISTICS. An introductory course concerned with measures of population, health and health service utilization; standardization; life tables and survivorship; cohorts and competing risks; and comparative health statistics.

513-604D GRADUATE SEMINARS. Scientific meetings and seminars of departmental interest.

513-605D COURSE FOR M.Sc. AND Ph.D. CANDIDATES. Prescribed course of study to meet a candidate's particular requirements.

513-606 A EPIDEMIOLOGY. A course covering: the epidemiological approach in medicine and the uses of epidemiology; epidemiologic procedures in cross-sectional and cohort surveys, case-control studies and clinical trials; and causal factors in disease. The course includes study of

the epidemiology of some diseases chosen from the main disease groups.

513-607A PRINCIPLES OF INFERENTIAL STATISTICS IN MEDICINE. An introductory course covering the following topics: variability and the need for statistics; confidence and significance; decisions; some basic statistical techniques; recognition of problems where these techniques are and are not applicable; study design in relation to available tools of analysis.

513-608B ADVANCED EPIDEMIOLOGY. During this course a small number of selected topics within epidemiology or health care research are reviewed by the students. A tutor is available for each topic and students are asked to review the present state of knowledge and suggest practical lines for further investigation. The course provides much time for personal study and requires participation in seminars and written presentation.

513-609B PRINCIPLES OF MEASUREMENT IN EPIDEMIOLOGIC SURVEY. Lectures, discussions and demonstrations to examine, with experts from differents fields, principles in the measurement of man and his environment for epidemiologic purposes. Each student will be required to design and conduct a project employing the principles of measurement.

513-611B HEALTH CARE RESEARCH METHODS. Detailed study through seminars, guided reading, etc. of the application of methods used by epidemiologists, clinical researchers and social scientists in the assessment of demand, need, efficiency and effectiveness in relation to health services.

513-612B OCCUPATIONAL HEALTH. A course providing opportunity for detailed study by seminars, guided reading, visits and assignments, to acquaint the student with principles of assessment of interactions between man and his occupational environment and with principles and organisation of prevention of damage to health.

513-613B SPECIAL TOPICS IN EPIDEMIOLOGY AND HEALTH: ELECTIVE. A course providing opportunity for detailed study by seminars, guided reading, visits, practicals, assignments, etc. of an elected and approved topic of epidemiological importance.

513-614B PUBLIC POLICY IN THE HEALTH FIELD. A multidisciplinary course, examining, in seminars, through guided reading, etc., the evolution of public policy in the health field and its implementation, particularly in Quebec. The roles of various faculties and departments of McGill are placed in the context of existing Federal and Provincial policy, statutes and regulations.

513-621A STATISTICAL PROCEDURES IN MEDICINE. Lectures, discussion and guided practical work in the statistical procedures required in epidemiology, clinical research and health care studies, including univariate and multivariate parametric and non-parametric techniques.

513-622B SEMINAR ON THE APPLICATIONS OF STATISTICS IN THE HEALTH SCIENCES. Two overlapping series of seminars. In one, the students will be taught about the statistical problems arising in a wide range of current projects in the Faculty of Medicine; in the other, the students will make presentations providing solutions to these problems.

513-623B PROTOCOL FORMULATION IN HEALTH SCIENCES RESEARCH. Lectures and discussion, including student presentations, covering: scientific method; basic design; sampling and stratification; patient allocation and matching; bias and error; degrees of freedom and trial size; missing values; development of further hypotheses.

513-624A ORGANIZATION OF HEALTH SERVICES. The course reviews in lectures and seminars the evolution and present nature of health-related services in Canada and Quebec. This is compared with the situation of other countries at various stages of economic development. The capacity of private and governmental health and social services to meet needs for prevention, treatment and after-care in the general community and special groups, is examined. Manpower and economic implications are considered.

D6 SCHOOL OF HUMAN COMMUNICATION DISORDERS

STAFF

Professor — D.G. DOEHRING *(Research Director)*; D. LING
Associate Professor — K.K. CHARAN *(Director)*
Assistant Professors — B. BARTHOLOMEUS; A.H. LING
Part-time teaching staff — Assistant Professors — N. CHAN; J. DUDLEY; H. ILECKI; S. MATTINGLY; D. MOSCOVITCH; C. REED
Sessional lecturers — L. DOWSON; H. FISHMAN; R. HEBERT; A. KATSARKAS; D. LECKIE; S. MITCHELL; J. REED

The School of Human Communication Disorders offers both professional and research training. The professional program leads to the M.Sc. (Applied) degree in speech and language pathology or in audiology and aural rehabilitation. The research program leads to the M.Sc. and Ph.D. degrees.

REQUIREMENTS

Requirements for the M.Sc. (Applied) Degree

A limited number of candidates with undergraduate standing equivalent to a B average (3.0 on a four point scale) or better are accepted each year from McGill and elsewhere. Because of the rapidly-changing state of knowledge regarding speech and hearing disorders, emphasis is placed upon understanding of fundamental principles and critical evaluation of current methods rather than upon the teaching of specific techniques for diagnosis and therapy. Every effort is made to encourage active participation in the learning process in order that the student is prepared to function as a creative professional worker rather than as a technician.

This is normally a two-year program for which all candidates are required to present undergraduate preparation in closely allied areas appropriate to plans for specialization. The prerequisite subjects are three courses in psychology, and a course in statistical methods or an equivalent course. A knowledge of physics, mathematics, physiology, phonetics, linguistics, and modern developments in other related social sciences is desirable. In some cases, a qualifying year may be required before admission as a candidate for a degree. Candidates will normally follow a program in course work selected from those listed below. Each course is subdivided into several topics which may be presented by several different instructors. A three-month internship will be taken after the second year.

All relevant documents pertaining to the application must be received by March 31. Applications completed after this date may not be considered because of restricted enrolment.

Requirements for the M.Sc. and Ph.D. Degrees

Selected candidates may be nominated to the Faculty for a program of studies leading to the M.Sc. and Ph.D. degrees. In most cases, only applicants with prior training in some aspect of human communication disorders will be accepted as candidates for research degrees and prior research experience is essential for the Ph.D. program. An examination in a foreign language is not required.

Courses for Higher Degrees

401-610D BASIC SCIENCE OF HUMAN COMMUNICATION.

401-611D AUDIOLOGY AND AURAL REHABILITATION.

401-612D PHYSIOLOGY OF SPEECH AND HEARING.

401-613D SPEECH AND LANGUAGE PATHOLOGY.

401-620D ADVANCED LANGUAGE PATHOLOGY.

401-621D ADVANCED AUDIOLOGY.

401-622D ADVANCED SPEECH PATHOLOGY.

401-623D REHABILITATION OF THE AURALLY HANDICAPPED.

401-630D PRACTICUM.

401-640D RESEARCH METHODS.

401-641D INDEPENDENT PROJECT.

401-650D SEMINAR IN HUMAN COMMUNICATION DISORDERS.

401-660D LECTURES AND RESEARCH ON SELECTED ADVANCED TOPICS.

D7 DEPARTMENT OF EXPERIMENTAL MEDICINE

76/77

STAFF

Professors — M. BECKLAKE; D.G. CAMERON; B. COOPER; R.F.P. CRONIN; J. DIRKS; K.N. DRUMMOND; F.C. FRASER; S.O. FREEDMAN; C.J.-P. GIROUD; P. GOLD; H. GOLDSMITH; C.A. GORESKY; M. KAYE; J.I. KESSLER; G. KLASSEN; P.T. MACKLEM; J. MILIC-EMILI; M. McGREGOR; J.M. McKENZIE; J.D. METRAKOS; E.E. McGARRY; C.K. OSTERLAND; J.R. RUEDY; C.R. SCRIVER; S. SOLOMON

Associate Professors — A. AGUAYO; P.H. BEAUDRY; R. BLOSTEIN; G.M. BRAY; J.H.BURGESS; E. COLLE; J. CRAWHALL; D.D. DAUPHINEE; J. DUPRE; N.R. EADE; A.H. EISEN; E.L. FALLEN; H. GAULT; R. GARDINER; L. GOODFRIEND; R.D. GUTTMANN; D. HAWKINS; D.A. HILLMAN; J. HOGG; N. KALANT; D. KINSELLA; M. LEVY; P.W.A. MANSELL; J. MARTIN; L.A. MOROZ; B.E.P. MURPHY; R.I. OGILVIE; H. PAPPIUS; H.G. ROBSON; D. RUBINSTEIN; J. SEELY; P. SEKELJ; J. SHUSTER; A. TENENHOUSE; D.B. TONKS; R.H. USHER; A. VOST; N.B. WHITTEMORE; R.D. WILKINSON

Assistant Professors — B. BAIN; C.H. BASTOMSKY; B.R. BHAVNANI; S.H. BISAILLON; T.M.S. CHANG; C. COLE; L.F. CONGOTE; L. ENGEL; S. FLETCHER; G. GIANNOPOULOS; N.J. GILMORE; A. GONDA; E.R. GORDON; H. GUYDA; R. HAND; J.R. HOEY; K. ITIABA; M. JERRY; A. KAHLENBERG; S. KASAKURA; M. KATZ; J. KLASSEN; J. KRUPEY; O. MAMER; R. MARTIN; S. MISHKIN; M. MORISETTE; S. MULAY; P.V.N. MURTHY; B. POSNER; E. RABIN; A. ROTENBERG; H. SCOTT; A. SNIDERMAN; S.H. SOLOMON; R. SUTTON; G. TOLIS; M. ZAKARIJA; D.T. ZBOROWSKA-SLUIS

Lecturers — R. FENTON; T. HUBSCHER; P. SCHNEIDER; B. MURPHY.

ASSOCIATED MEMBERS

Professors — A. BARBEAU; R. BOUCHER; J.R. DUCHARME; J. GENEST; O. KUCHEL; A. LANTHIER; W. NOWACZYNSKI
Associate Professors — T. SANDOR; A. VIALLET
Assistant Professors — M. CHRETIEN; J. DAVIGNON; A. FAZEKAS; Y. MARCEL; J.M. ROJO-ORTEGA; D. TRACHEWSKY
Lecturers — C. DUFAULT; G. LEMIEUX; C.L. MORIN; S.V. PANDE; M. SHAPIRO

COURSES FOR HIGHER DEGREES

Courses

516-502A ADVANCED ENDOCRINOLOGY — PART I.
Professor Solomon

516-503B ADVANCED ENDOCRINOLOGY — PART II.
Professor Solomon

516-507D ADVANCED APPLIED RESPIRATORY PHYSIOLOGY.
Professor Engel

516-508A ADVANCED RENAL AND ELECTROLYTE PHYSIOLOGY.
Professors Dirks, Levy and Seely

516-512B PHYSICAL METHODS IN BIOLOGICAL RESEARCH.
Staff

516-513A PHYSIOLOGY OF THE IMMUNE RESPONSE. PART I.
Professors Gold and Lapp

516-514B PHYSIOLOGY OF THE IMMUNE RESPONSE. PART II.
Professors Gold, Guttman and Lapp

516-515A PHYSIOLOGY OF BLOOD. PART I.
Professor Cooper

516-516B PHYSIOLOGY OF BLOOD. PART II.
Professor Cooper

516-604D CELLULAR BIOLOGY.

516-606A ADVANCED APPLIED CARDIOVASCULAR PHYSIOLOGY.
Professors Fallen and Goldsmith

516-609B MEMBRANES: BIOPHYSICS' PHYSIOLOGY AND CLINICAL APPLICATION.
Professor Blostein

516-610A BIOCHEMICAL METHODS IN MEDICAL RESEARCH.

SCHEDULED GRADUATE SEMINARS

The Royal Victoria Hospital

(1 hour per week)

RESPIRATORY RESEARCH.
IMMUNOPATHOLOGY.
ENDOCRINOLOGY AND METABOLISM.
HAEMATOLOGY RESEARCH.
RENAL AND ELECTROLYTE SEMINAR.
RENAL TRANSPLANT SEMINAR.
GASTROENTEROLOGY CONFERENCE.
DIABETES CONFERENCE.
CHEST-CARDIAC DISEASE CONFERENCE.
CLINICAL ENDOCRINOLOGY CONFERENCE.
STEROID BIOCHEMISTRY RESEARCH.
HAEMATOLOGY CLINICAL CONFERENCE.
ENDOCRINOLOGY AND METABOLISM RESEARCH CONFERENCE.
CLINICAL IMMUNOLOGY CONFERENCE.
ARTHRITIS CONFERENCE.
INTERNAL MEDICINE.
DERMATOLOGY RESEARCH.
UNIVERSITY CLINIC SEMINAR.
CARDIOLOGY RESEARCH.

The Montreal General Hospital

(1 hour per week, or in some cases alternate week)

GASTROENTEROLOGY CONFERENCE.
RESPIRATORY DISEASES.
DERMATOLOGY.
INTERNAL MEDICINE.
ALLERGY AND IMMUNOLOGY.
INFECTIOUS DISEASES.
COMBINED STAFF CONFERENCE.
HAEMATOLOGY.
ARTHRITIS.
METABOLIC DISEASES.
CARDIAC DISEASE.
RENAL DISEASE.
NEUROLOGY — NEUROSURGERY.
UNIVERSITY MEDICAL CLINIC CONFERENCE.

D8 DEPARTMENT OF MICROBIOLOGY AND IMMUNOLOGY

STAFF

Professors — S.I. VAS *(Chairman);* B.H. MATHESON; J.W. STEVENSON; W. YAPHE
Associate Professors — Z. ALI-KHAN; C.A. BUTAS; E.C.S. CHAN; P.M. COOKE; J. de VRIES; P. GILL; R. HAND; L. KAPICA; C.H. PAI; G.K. RICHARDS; H.G. ROBSON; R. SIBOO
Assistant Professors — A.F. DOSS; I.B. FABRIKANT; J. GORDON; E. MANKIEWICZ; M. MARKS; L. MARTINEZ; J.L. MEAKINS; J. MENDELSON

Lecturers — M. BLANC; S. NOMMIK
Demonstrator — C. SHAW
Associated Members — R.D. GUTTMANN *(Medicine)*; C.K. OSTERLAND *(Medicine)*

REQUIREMENTS

Candidates are required to hold a major or Honours B.Sc. degree or the equivalent in Microbiology and Immunology or the M.D. degree with high standing in Microbiology, Biochemistry and Pathology. Those who do not meet the above qualifications may be required to take a two-year Master's program in order to complete course requirements.

Requirements for the M.Sc. Degree

Candidates who satisfy the general qualifications above may present themselves for examination for the M.Sc. degree after not less than one full year of research. The following requirements must be satisfied: (1) Presentation of a satisfactory thesis. (2) Attendance at Courses 528-602D and 528-703D and presentation of at least two seminar topics during the year. (3) Formal courses with examination where necessary (528-501D, 528-525B, 528-527B — see below).

Requirements for the M.Sc. (Applied) Degree

This is a new program first offered by the Department in the 1975-76 session. The principal aim of the program is to provide specialized training in APPLIED Medical Microbiology and Immunology to those who might be expected to function as assistants to the directors of hospital clinical diagnostic laboratories and public health laboratories including units concerned with pollution control insofar as they relate to microbial activities. It is also to be hoped that the program will enable graduates to adapt more readily to a career in the pharmaceutical industries and related industries of some significance in the health field than does the present conventional M.Sc. program in Microbiology and Immunology.

Candidates must satisfy the general requirements noted above for the conventional M.Sc. degree except that the minimum in-residence requirement is *two* full academic sessions. In addition to one year of bench training in diagnostic medical microbiology and formal course work, including seminars (see below), a research project of a practical nature will form an important part of the overall program and a comprehensive research report must be presented. A detailed brochure describing the M.Sc. (Appl.) program is available, upon request, from the Department of Microbiology and Immunology.

Requirements for the Ph.D. Degree

Following satisfactory completion of the work for the M.Sc. degree candidates may present themselves for examination for the Ph.D. degree after not less than two full years of research. The candidate will be judged principally on his research ability and on the presentation of a satisfactory thesis. However, certain other requirements must also be fulfilled: (1) Attendance of Courses 528-702D and 528-703D with the presentation of at least two seminar topics each year. (2) A comprehensive examination in Microbiology and Immunology (Course 528-701D) must be passed. It is held during the final year of study and at a time not later than six months before submission of the thesis.

COURSES FOR HIGHER DEGREES

SPECIAL FACILITIES: The clinical laboratory services in bacteriology, virology and mycology are available to candidates as a means of instruction and as a source of material for study.

Advanced Undergraduate Courses

528-313B PARASITOLOGY.*

528-315B THE PATHOGENIC FUNGI.

528-422A PATHOGENIC BACTERIA.

528-423A MICROBIAL PHYSIOLOGY.

528-424A FUNDAMENTAL VIROLOGY.

528-425B PATHOGENIC VIRUSES.

Graduate Courses

528-501D ADVANCED MICROBIOLOGICAL TECHNIQUES.

528-525B PATHOGENIC VIRUSES.

528-527B INFECTIOUS IMMUNOLOGY.

528-602D GRADUATE SEMINAR — MASTER'S LEVEL.

528-603H PRACTICAL DIAGNOSTIC MICROBIOLOGY AND IMMUNOLOGY (Bench Training) (Offered only to M.Sc. (Appl.) applicants)

528-604D INDEPENDENT RESEARCH PROJECT IN APPLIED MICROBIOLOGY AND IMMUNOLOGY (M.Sc.(Appl.) Program)

528-605D ADVANCED INDEPENDENT RESEARCH PROJECT IN APPLIED MICROBIOLOGY AND IMMUNOLOGY (M.Sc.(Appl.) Program)

528-606D ADVANCED VIROLOGY (M.Sc. (Appl.) Program)

528-701D COMPREHENSIVE EXAMINATION FOR Ph.D. CANDIDATES.

528-702D GRADUATE SEMINAR — Ph.D. LEVEL. Lectures and discussions once a week. All graduate students are required to participate.

528-703D CURRENT TOPICS IN MICROBIOLOGY AND IMMUNOLOGY. (Discussion groups with guest speakers)

D9 DEPARTMENT OF NEUROLOGY AND NEUROSURGERY

76/77

STAFF

Professors — W.H. FEINDEL *(Chairman);* D. BAXTER; G. BERTRAND; R. GILBERT; P. GLOOR; F.L. McNAUGHTON; BRENDA MILNER; T.B. RASMUSSEN; J.P. ROBB; J. STRATFORD; L. WOLFE

Associate Professors — A. AGUAYO; G. BRAY; F. ANDERMANN; J. BLUNDELL; A.A. EISEN; S. CARPENTER; J.B.R. COSGROVE; R. ETHIER; R. HANSEBOUT; I. HELLER; GEORGE KARPATI; D. LAWRENCE; I. LIBMAN; J. MARTIN; G. MATHIESON; HANNA PAPPIUS; A.L. SHERWIN; D. TROP; G. WATTERS

Assistant Professors — R. CATCHLOVE; C. DILA; M.H. FINLAYSON; R. FORD; B. GRAHAM; D. MELANÇON; KATHERINE METRAKOS; MARY MORRIS; A. MORTON; A. OLIVIER; S. PRELEVIC; M. RASMINSKY; L. RENAUD; W. SHEREMATA; W.F.T. TATLOW; J. WOODS; L. YAMAMOTO

Lecturers — EVA ANDERMANN; M. AUBE; G. BELANGER; S. BEKHOR; L. CUADRADO; R. HOLLENBERG; P. HUMPHREYS; J.R. IVES; M. LECHTER; C. MELMED; W. OLANOW; S. ROTHMANN; CLARA STRAUSS; L. TAYLOR; C. THOMPSON

REQUIREMENTS

Admission

Candidates for graduate degrees must first meet the general qualifications and requirements for admission to the Graduate School (for M.Sc. degrees see Section 4 and for Ph.D. degrees see Sections 19-27 of Faculty Regulations). A candidate must advise his prospective Research Director of his intent to enrol in a graduate study program leading to either an M.Sc. or a Ph.D. degree by May 15. The candidate's study program must be approved by 1) the director of the candidate's research and 2) by the Committee of Graduate Studies of the Department of Neurology and Neurosurgery. Registration as a graduate student cannot take place without the approval of this Committee.

The M.Sc. program is a two-year program. In exceptional cases upon recommendation by the Committee of Graduate Studies of the Department of Neurology and Neurosurgery this requirement may be reduced to a one year program for students who spend one full year of laboratory research.

The Ph.D. Program is a three-year program. For M.D.s it is not necessary to obtain an M.Sc. first.

COURSE REQUIREMENTS

a) NEUROSCIENCES SEMINAR. (Course 531-602H) for two years with satisfactory examination at the end of each year. This seminar represents the "core program" of the graduate studies program of the Department of Neurology and Neurosurgery. The complete course extends over two years.

b) SELECTED BASIC SCIENCE COURSES from undergraduate or graduate programs in other departments or special courses in subdepartments within the Department of Neurology and Neurosurgery. The courses will be selected at the beginning of the student's Graduate Program after discussion with the candidate's Research Director and the Committee of Graduate Studies of the Department of Neurology and Neurosurgery. The courses will be selected to fill in or complement the student's background in the particular specialty of his graduate studies. Satisfactory credit for these courses has to be obtained. The method whereby the candidate is to be given credit is left to the discretion of the course directors involved and of the Director of the candidate's research, and will require some form of examination or an acceptable substitute.

c) SPECIALTY DISCUSSION GROUP AND SEMINARS. These seminars will be given informally in the various subdepartments and laboratories of the Department of Neurology and Neurosurgery. Recent developments and ideas will be reviewed with particular emphasis on critical discussion of current literature and experimental designs. No formal credit is required except for a reasonably regular record of attendance and active participation in seminar work.

d) PRESENTATION OF A THESIS. The final draft of the thesis has to be submitted to the candidate's Research Director at least 60 days before the deadline for submission of the final copy to the Faculty of Graduate Studies and Research.

GRADUATE COURSES

Neurosciences Seminar

531-602H This is a course of weekly seminars, given during the academic year, designed to present over a 2-year period a concise, up-to-date review of the basic neurological disciplines. Mondays, 4:30 — 6:00 p.m.
Professors Gloor, Wolfe, Feindel, and other members of the Department of Neurology and Neurosurgery, and related McGill Departments.

Neurophysiology

531-610A Lectures, together with undergraduate Neurology and Neurosurgery Course 2A "Anatomy and Physiology of the Central Nervous System".

531-611A Seminars and group discussions in Neurophysiology.
Professor Gloor

Neuroanatomy

531-621A Seminars and group discussions in neuroanatomy. By special arrangement.
Professor Lawrence

Clinical Conferences

531-630H Colloquium in clinical and basic aspects of the nervous system. Wednesdays 8:30 p.m. monthly during the academic year.
Staff and Visiting Lecturers

531-631H Seizure and EEG conference — alternate Thursdays 4:30 p.m.
Professors Gloor, Andermann, Rasmussen, Milner and Ethier

Neurochemistry

531-640H Seminars in Neurochemistry in addition to that provided in Course 531-602H. By special arrangement.
Professors Wolfe and Pappius

Neuropathology

531-650H Six or twelve months laboratory work in Neuropathology.

531-651H Conference in Neuropathology, alternate Thursdays, 4:30 — 5:30 p.m.

531-652A Neurological histopathology, an introduction. Ten sessions of 2 hours, course limited to 8 participants. Time to be arranged.
Professor Mathieson

Neuroradiology

531-660H Practical instruction in techniques and interpretation.

531-661A Lecture demonstration (3 months in the fall), Mondays 4:30 — 5:30 p.m.
Professors Ethier and Melançon.

Electroencephalography and Clinical Neurophysiology

531-670H Laboratory work in Electroencephalography (minimum-6 months with active participation, seminars and clinical conferences).
Professor Gloor

Neuropsychology

531-680H Training and research methods for selected graduate students.
Professors Milner and Staff

D10 DEPARTMENT OF OTOLARYNGOLOGY

STAFF

Professors — J.D. BAXTER *(Chairman);* D.G. DOEHRING; D. LING
Associate Professors — K.K. CHARAN; R.H. McCOY; J.S. OUTERBRIDGE; E.J. SMITH
Assistant Professors — E. ATTIA; B. BARTHOLOMEUS; *(on leave);* M.J. BLACK; A. COHEN; A. GROSSMAN; H.J. ILECKI; M.N. LEVITT; A. LING; M. MENDELSOHN; W.H. NOVICK; M.R. SEITZ; R. SHAPIRO; G. SHIMO
Lecturers — H. CAPLAN; I. FRIED; A. KATSARKAS; R. LAFLEUR; R.W. McMILLAN; M.D. SCHLOSS; G.M. SINCLAIR; J. SINGH

REQUIREMENTS FOR THE M.Sc. DEGREE

Students must hold an M.D. degree with appropriate prerequisites.

The major part of the student's time will be spent in research and a thesis covering this work will be the major requirement for the degree. In addition the student will be required to attend certain courses given in the Department and in cooperating departments.

GRADUATE COURSES

540-602D ADVANCED COURSE IN PHYSIOLOGY, HISTOPATHOLOGY AND CLINICAL OTOLARYNGOLOGY.

540-603D LECTURES IN BASIC SCIENCES OF OTOLARYNGOLOGY.

Each student will be required to take certain courses in cognate subjects, such as Neuroanatomy, Neurophysiology, Medical Statistics and Physiology Instrumentation. The courses to be taken will depend upon the candidate's background and the research problem being studied.

D11 DEPARTMENT OF PATHOLOGY

STAFF

Professors — ROBERT H. MORE *(Chairman);* R. BOLANDE; W.P. DUGUID; J.C. HOGG; S.N. HUANG; D.S. KAHN; M.G. LEWIS; G. RONA; H. SHELDON; G. TREMBLAY

Associate Professors — S.H. CARPENTER; M.H. FINLAYSON; J.O. LOUGH; K.G. MARSHALL; G. MATHIESON; D.M. MURRAY; B.I. WEIGENSBERG

Assistant Professors — M.L. de CHAMPLAIN; A. FERENCZY; R.D.C. FORBES; D. HAEGERT; I. HUTTNER; MOINUDDIN; M.R. REESAL; N.S. WANG; J.L. WEBB;

Lecturers — P. BOLDUC; D. KALOUSEK

REQUIREMENTS

Ordinarily candidates for a graduate degree in Pathology should have received an M.D., D.V.M. or D.D.S. Students who have obtained a B.A. or B.Sc. or other degree may be considered for postgraduate training. At the end of the first postgraduate year, the candidate must demonstrate a satisfactory knowledge of general and special pathology, and of the methodology in his field of interest. Work published or accepted for publication during enrolment in the doctorate program is suitable for partial fulfilment of these requirements. Three years residence is normally required of a Ph.D. candidate. There is no language requirement for a doctorate in Pathology.

COURSES FOR HIGHER DEGREES

524-221J BIOLOGY OF DISEASE
Professors Hogg and Richardson

546-121J PATHOLOGY. This course is largely a self preparation program taught in seminars. It covers the principles of general pathology and their relationship to commonly encountered diseases.
Professor Kahn

546-300A PRINCIPLES OF DISEASE. This course is an introduction to the study of disease. It is concerned with changes in normal structure and function and their causes at the host, tissue and cellular level. It considers the concepts of health and disease, and uses examples drawn from history, animal experiments and human experience in medicine. It is suitable for all students in biology. Students in U2/U3 will receive preference. There are no laboratories but students are expected to participate in seminars and a major paper is required.
Professor Sheldon

546-606D CLINICAL PATHOLOGY COURSES.
Professor Reesal and Staff

546-607A BIOCHEMICAL PATHOLOGY. A consideration of biochemical alterations involved in disease states.
Professors Hosein and Reesal

546-608A BIOCHEMICAL AND ULTRASTRUCTURAL ASPECTS OF BLOOD. Ultrastructural and biochemical features of blood elements.

546-621B HEMATOPATHOLOGY.
Professors Menasc and Moinuddin

546-701D COMPREHENSIVE EXAMINATION FOR Ph.D. CANDIDATES.
Supervisor and Staff

Scheduled Graduate Seminars (Pathology Institute)

The student may be expected to attend certain scheduled Departmental Seminars.

546-610D AUTOPSY REVIEW CONFERENCE. (2 hours/week).
Professor Huang

546-611D SURGICAL REVIEW CONFERENCE. (2 hours/week).
Professor Tremblay

546-612D COMPLETED CASE CONFERENCE. (1 hour/week).
Professors Huang and Tremblay

546-613D DEPARTMENTAL RESEARCH SEMINAR. (1 hour/week).
Professor Forbes

D12 DEPARTMENT OF PHARMACOLOGY AND THERAPEUTICS

STAFF

Professors — J.R. RUEDY *(Chairman);* J. LOWENTHAL; M. NICKERSON

Associate Professors — B.G. BENFEY; R. CAPEK; B. COLLIER; N.R. EADE; A.H. NEIMS; R.I. OGILVIE; A.M. TENENHOUSE; J.M. TRIFARO; D. VARMA

Assistant Professors — F.Y. AOKI; L.W.K. CHUNG; B. ESPLIN; E. KOVACS; G. KUNOS; C. MACLEOD; P.J. McLEOD; R.E. RANGNO; J.B. RICHARDSON; B.I. SASYNIUK; D.S. SITAR; M.S. YONG

Lecturers — J. ARANDA; R.O. DAVIES; W. LASKEY; J. WEYMAN

The department offers work leading to the M.Sc. and Ph.D. degrees for students who have completed the B.Sc., M.Sc., M.D. or an equivalent degree with high academic standing. Applicants

may be required to take the Graduate Record Examination Aptitude Test and to have letters of recommendation. Except for certain students holding the M.D. degree, the M.Sc. in pharmacology is not recommended as a primary objective. In addition to work in this department, students may be required to make up deficiencies in ancillary subjects such as biochemistry and physiology. Facilities are available for work in neuropharmacology, cardiovascular pharmacology, autonomic pharmacology, biochemical pharmacology, drug metabolism, and clinical pharmacology. A student may undertake studies in several of these areas before selecting one for his thesis work.

Inquiries relating to all aspects of graduate study should be directed to the Director of Graduate Studies, Department of Pharmacology and Therapeutics as early as possible in each academic year.

COURSES FOR HIGHER DEGREES

A basic course in Pharmacology is required for graduate students who have not previously taken an equivalent course. This is usually 549-461D (GENERAL PHARMACOLOGY) which includes consideration of the effects and mechanism of action of the more important groups of drugs.

The following courses are designed primarily for graduate students, but may be attended by others under special circumstances. These courses are given in a variable sequence depending on the interests and requirements of graduate students enrolled in the department.

* **549-702B BIOCHEMICAL PHARMACOLOGY.** Interaction of natural and synthetic chemicals with subcellular or molecular entities in living systems.

549-703A NEUROPHARMACOLOGY. The basic actions of drugs affecting axonal conduction and synaptic transmission, with particular emphasis on the central nervous system.

549-704B DRUG DISTRIBUTION, METABOLISM AND EXCRETION. Mechanisms by which the body handles endogenous and foreign chemicals and the effects of these processes on the characteristics of drug action.

* **549-705B CARDIOVASCULAR REGULATION AND DRUG ACTION.** Homeostatic regulation of cardiovascular function and its modification by drugs.

* **549-706A CHEMICAL MEDIATORS AND AUTONOMIC DRUGS.** Interactions of drugs and chemical mediators to mimic, augment or inhibit responses to peripheral nerve activity.

* **549-707A MOLECULAR PHARMACOLOGY.** Actions of drugs on specific tissue receptors; relationship of physical and chemical properties to the characteristics of drug action.

D13 SCHOOL OF PHYSICAL AND OCCUPATIONAL THERAPY

76/77

STAFF

Associate Professor — HELEN M. GAULT *(Director)*
Assistant Professors — ANNE-MARIE van DAELE; CAROL RICHARDS

Masters Program

Enquiries concerning a masters program in Physical Therapy should be addressed to Professor van Daele, School of Physical and Occupational Therapy.

D14 DEPARTMENT OF PHYSIOLOGY

STAFF

Professors — J. MILIC-EMILI *(Chairman)*; R.I. BIRKS; *(on leave 1976-77)* T.M.S. CHANG; B.A. COOPER; P. GOLD; K. KRNJEVIC; F.C. MacINTOSH; G. MELVILL-JONES
Associate Professors — M.W. COHEN; M.M. FROJMOVIC; V. KLISSOURAS; W.S. LAPP; M. LEVY; M. MACKEY; G. MANDL; G. MISEROCCHI; J.S. OUTERBRIDGE; C. POLOSA; P. SEKELJ; A. WECHSLER;
Assistant Professors — A.W. CHAWLA; L. GLASS; P. KONGSHAVN; K LUKOWIAK; P. NOBLE; S. POTASHNER; P. WELDON; R.L. WILLIAMS
Associate Members — R.F.P. CRONIN *(Prof., Med.)*; B.O. DUBROVSKY *(Assoc. Prof. Psychiatry)*; H.L. GOLDSMITH *(Prof. Exp. Medicine)*; C.A. GORESKY *(Prof. Medicine)*; D. HORROBIN *(Prof. Med., Univ. Montréal)*; P.T. MACKLEM *(Prof. Exp. Medicine)*; J.M. McKENZIE *(Prof. Exp. Medicine)*; M.M. MORRIS *(Assist. Prof. Anaesthesia)*; G. QUAMME *(Assist. Prof. Exp. Med.)*; S ROSSIGNOL *(Assist. Prof., Univ. of Montreal)*; J.F. SEELY *(Assoc. Prof. Exp. Medicine)* M. YOUNES *(Assoc. Prof. Med.)*

Admission:

Students who have completed an Honours Program in Physiology or some other appropriate undergraduate program and who have been accepted by a research director and by the Department may register for the M.Sc. degree. After one year of study in the Department those M.Sc. students who display a high standard in research and course work may be permitted to proceed directly to the Ph.D. degree. Those students who do not enter the Ph.D. program

at the end of M.Sc. 1 may be permitted to write an M.Sc. thesis. Students who obtain an M.Sc. degree may apply for entrance into the Ph.D. program.

Course Requirements:

Research Seminars — M.Sc. students are required to give at least one seminar before submission of their thesis or before being permitted to enter a Ph.D. program. Ph.D. students are required to give a seminar at least once every two years. *Comprehensive Examination in Physiology* — required for the M.Sc. and/or the Ph.D. degree to show broad knowledge of Physiology and the capacity to integrate this knowledge at the intermediate level. *Other Course Work* — Students are usually expected to complete at least two of the Department's advanced or graduate courses in their first year. Other course requirements will depend on their field of study.

The main research interests of the Department are at present the chemical and electrical behaviour of the nervous system, electron microscopy and muscle physiology, the release of physiologically active substances from tissues, transplantation reactions and tissue specificity, respiratory mechanics and control of ventilation, studies of sodium excretion in experimental edema, the biophysics of the muscle and of mechanoreceptors, labyrinthine responses to acceleration, enzyme technology, artificial kidneys, the study of the effects of air pollutants on the human lung, hemostasis, fetal and neonatal circulation.

COURSES FOR HIGHER DEGREES

All courses are half courses except for 552-507D which is a full course.

552-502A EXERCISE PHYSIOLOGY. Offered in conjunction with the Faculty of Education.
Professor Klissouras

552-507D ADVANCED APPLIED RESPIRATORY PHYSIOLOGY. Offered in conjunction with the Department of Experimental Medicine.
Professor Engel

552-508A ADVANCED RENAL PHYSIOLOGY. Offered in conjunction with the Department of Experimental Medicine.
Professor Levy

552-513D CELLULAR IMMUNOLOGY. Offered in conjunction with the Department of Experimental Medicine.
Professors Lapp and Gold

552-515A PHYSIOLOGY OF BLOOD I. Offered in conjunction with the Department of Experimental Medicine.
Professor Cooper

552-516B PHYSIOLOGY OF BLOOD II. Offered in conjunction with the Department of Experimental Medicine.
Professor Cooper

552-517B PHYSIOLOGICAL SUPPORT SYSTEMS.
Professor Chang

552-605B DYNAMICS AND CONTROL IN PHYSIOLOGICAL SYSTEMS. Offered in conjunction with Biomedical Engineering.
Professor Outerbridge

552-606B ADVANCED APPLIED CARDIOVASCULAR PHYSIOLOGY. Offered in conjunction with the Department of Experimental Medicine.
Professor Goldsmith

552-610B BIOPHYSICS.
Professor Mackey

552-631B SELECTED TOPICS IN APPLIED IMMUNOLOGY.
Professor Kongshavn

D15 DEPARTMENT OF PSYCHIATRY

STAFF

Professors — M. DONGIER *(Chairman)*; M.K. BIRMINGHAM; H. CAPLAN; H. KRAVITZ; H.E. LEHMANN; A.W. MacLEOD; R.B. MALMO; A.M. MANN; H.B.M. MURPHY; T.L. SOURKES

Professors Emeritus — R.A. CLEGHORN; E.D. WITTKOWER

Visiting Professor — D.H. MALAN; P. SIFNEOS

Associate Professors — J.V. ANATHARAMAIAH; F. AZIMA; T.A. BAN; B.M. CORMIER; I.S. DISHER; B.O. DUBROVSKY; P.G. EDGELL; W.D. ENGELS; F. ENGELSMANN; R.B. FELDMAN; B.A. GIBBARD; B. GRAD; L. GRATTON; L.G. HISEY; E.P. LESTER; J.G. LOHRENZ; F.W. LUNDELL; A.S. MacPHERSON; D.J. McCLURE; H.F. MULLER; J. NAIMAN; J.C. NEGRETE; R. PITTINGER; E.G. POSER; R.H. PRINCE; J.J. SIGAL; L. SOLYOM; J.R. UNWIN; G. WEISS

Assistant Professors — N.R. ALDOUS; M.M. AMIN; C.C.J. ANGLIKER; S. BARZA; J. BEAUBIEN; P.R. BECK; C. BOS; C. CAHILL; C.H. CAHN; J. CUMBERLAND; H. DAVANLOO; E.G. DEBBANE; S. DONGIER-MONTAGNAC; S.Z. DUDEK; F. FENTON; H. GRAUER; H.A. GUTTMAN; G.P. HARNOIS; B.R. HUNT; S. LAL; A.P.N. LEE; D.C. LEVIN; E.D. LEVINSON; H.L. LEVITAN; J.G. MAGUIRE; G.F. MORGENSTERN; E. NALTCHAYAN; G. PETERFY; D. PIVNICKI; R.A. RAMSAY; S. STEIN; G.C. TAYLOR; G. TURCOT; L. VACAFLOR; S. WILNER; N. WISEBORD; C. YUNG

Lecturers — E.H. ACHONG; R. ARBITMAN; K. ARVANITAKIS; H. AST; A. BARTOVA; S. BAYRAKAL; P. BELIVEAU; C. BENIERAKIS; S. BIKADOROFF; L. BUFFETT; P.B. CAMPBELL; S. CAMPBELL; A.J. CARRE; M. CERROLAZA; G.

CHOUINARD; J.D. CUTHILL; L. DEMRES-DESROSIERS; H.A. EVANS; H. FREEDMAN; P. GAGNON; J. GARANT; K. GEAGEA; L. GOMEZ; P. GREGOIRE; L. GUERETTE; A. HAUSFATHER; L. HECHTMAN; L. HUAPAYA; P. KACHANOFF; R. KELLER; R. KIRIAKOS; T. KOLIVAKIS; I. KRAULIS; F.E. KRISTOF; D.J. KUSSIN; C. LAROCHE; G. LAROCHELLE; J. LEVY; G. LOW; G.W. MacLEAN; H.P. MALMO; S.A. MARTIN; A.F. MESZAROS; R.C. MONKS; A.K. MULLER; N.P.V. NAIR; D.P. NOWLIS; J.C. PECKNOLD; I. REBNER; B.M. ROBERTSON; M. ROMER; P.D.L. ROPER; J. RUIZ-NAVARRO; M. SALIB; P.D. SCULLY; R.W. SHEPARD; S.P. SIMONS; F.A. SMITH; R.M. SMITH; A.A. SURKIS; G. TAHTA; D. TSANG; D.J. WOOD; S.N. YOUNG; P. ZUARDI

REQUIREMENTS FOR THE M.Sc. DEGREE

Admission is restricted to candidates who hold an M.D. degree with good standing from an approved institution, and who have had not less than three years postgraduate training in Psychiatry in an approved centre.

The degree usually requires two years, but, under special circumstances, may be accomplished in one, spent wholly in research. The thesis topic and research subject must be approved beforehand by a committee headed by the Chairman of the Department of Psychiatry, and by the Dean of the Faculty of Graduate Studies and Research. The problem studied may belong to a clinical field, but a rigorous investigative approach must be utilized.

Adequate library and laboratory facilities are available in the Department of Psychiatry and are located in the Allan Memorial Institute of the Royal Victoria Hospital.

Cognate Subjects

Each student will be required to take certain courses in cognate subjects, such as Biochemistry, Endocrinology, Neurophysiology, Psychology, Sociology or Statistics. These will be determined upon the basis of the special field of Psychiatry in which the candidate's research work is being carried out.

GRADUATE PROGRAM IN TRANSCULTURAL PSYCHIATRY

1. The purposes of this program are:
   (a) to train researchers from psychiatry, anthropology and related disciplines for work in the borderland between cultural anthropology and international psychiatry;
   (b) to orient mental health practitioners and administrators from underdeveloped countries towards the need to consider the cultural backgrounds of their peoples; and to assist them in doing so.
2. The needs of trainees in this field being so varied, and also so influenced by their own backgrounds, the main emphasis in this program is on individual tuition and on the selection of courses in different departments to strengthen areas of knowledge and experience relevant to the individual's needs. Field experience under supervision is arranged as necessary, and core courses are provided.
3. The M.Sc. in Psychiatry will be granted to suitably trained medical graduates upon the completion of an approved thesis.
4. For non-medical graduates the program can usually be taken in *part* fulfilment of the requirements for a Ph.D. or other higher degree, subject to the normal regulations of the departments concerned.

Courses

555-711D CULTURE, PERSONALITY AND PSYCHOPATHOLOGY.
Professor Murphy and Staff

D16 DEPARTMENT OF DIAGNOSTIC RADIOLOGY

STAFF

Professors — R.G. FRASER *(Chairman);* J.I. FABRIKANT

Application for admission as candidates for the M.Sc. degree will be considered from graduates in Medicine, Dentistry or Veterinary Medicine, whose interests are directly concerned with the application of ionizing radiation in investigation and diagnosis. The normal admission standards of the Faculty will apply. Two years may be required to complete qualification for the degree in order to include adequate knowledge of the fundamental sciences. Further information may be obtained from the Chairman of the Department.

D17 DEPARTMENT OF SURGERY

76/77

[Division of Surgical Research]

STAFF

Professors — A. THOMPSON *(Chairman);* A.R.C. DOBELL; L.D. MacLEAN;
Associate Professors — DEIDRE M. WALDRON - EDWARD; J. GORDON; E.J. HINCHEY; S.C. SKORYNA
Assistant Professors — H.S. HIMAL; A.H. McARDLE
Lecturers — ANNA DANIEL; L. GREENBERG; C.A. LAURIN; N.M. SCHEINER; Y. TANAKA

76/77 Surgery

Research Laboratories	*Directors*
Donner Building	J. GORDON
Montreal General Hospital	E.J. HINCHEY
Royal Victoria Hospital	H. SHIZGAL
Montreal Children's Hospital	A.D. MacKENZIE

REQUIREMENTS

Residents in Surgery in the teaching hospitals are eligible to enter the graduate program. Other applicants outside the surgical training program, who possess an M.D. or B.Sc. degree or equivalent may be admitted by special arrangement. The minimum full time residence for a Master's degree for those in the surgical training program is one year: for others it is two years. The minimum full-time residence for a Ph.D. program is three years for all candidates. All candidates registering for a degree must have a research director approved by the Chairman of the Department, or by his opposite in the other teaching hospitals.

The main research interests in the Department are at present; transplantation, experimental carcinogenesis, cardiovascular surgery, gastroenterology, shock water and electrolyte metabolism, and the effects of thermal injury. In addition, several research projects are conducted in surgical specialties In view of these varied interests, only one seminar course is made compulsory for all candidates; two others are recommended.

Additional courses are to be selected on the basis of each candidate's field of research, in consultation with his or her research director.

COURSES RECOMMENDED

519-602D SURGICAL ANATOMY. 1 hour weekly and demonstrations in anatomy laboratory to undergraduate medical students or an equivalent course in another basic science department.

177-373A BIOMETRY. 2 hours lectures, 2 hours laboratory. *(See Faculty of Science Announcement under Biology).*

Compulsory course — 519-603D

SCHEDULED GRADUATE SEMINARS

The Royal Victoria Hospital (1 hour per week)

CARDIOVASCULAR-THORACIC CONFERENCE.
ACCIDENT SURGERY SEMINAR.
GENERAL SURGERY SEMINAR.
NEOPLASTIC SEMINAR.
COMBINED MEDICAL-SURGICAL GASTRO-INTESTINAL CONFERENCE.
SURGICAL LITERATURE SEMINAR (RECENT ADVANCES).
TRANSPLANTATION CONFERENCE.
ORTHOPAEDIC CONFERENCE.
PLASTIC SURGERY SEMINAR.
SURGICAL GRAND ROUNDS.

The Montreal General Hospital (1 hour per week, or in some cases alternate week)

RESEARCH SEMINARS, UNIVERSITY SURGICAL CLINIC.
GASTROENTEROLOGY CONFERENCE.†
OPHTHALMOLOGY CONFERENCE.
CARDIOVASCULAR-THORACIC CONFERENCE.
GENITO-URINARY CONFERENCE.
NEUROSURGERY CONFERENCE.
TUMOUR BOARD CONFERENCE.
COMBINED MEDICAL-SURGICAL CONFERENCE.†
TRAUMA CONFERENCE.
COMBINED SURGICAL CONFERENCE.†
ORTHOPAEDIC CONFERENCE.
CARDIAC CONFERENCE.†
GENERAL SURGERY SEMINARS.

† *In conjunction with Experimental Medicine.*

GASTROINTESTINAL RESEARCH LABORATORY

Associate Professors — S.C. SKORYNA *(Director)*; D. WALDRON-EDWARD
Assistant Professor — Y. TANAKA
Research Associates and Consultants — B.B. BIBLE *(Nutrition)*; M.A. FRANKLIN *(Microbiology)*; R.G. FRASER *(Radiology)*; W.F. GRANT *(Cytogenetics)*; A. HURLBURT *(Biochemistry)*; K.C. HONG *(Marine Biochemistry)*; D.S. KAHN *(Pathology)*; P.V. KINGSTON *(Clinical Investigation)*; F.D. LIDDELL *(Epidemiology and Statistics)*; E. ROSENTHALL *(Mathematics)*; M.A. VISWANATHAN *(Plant Physiology)*

The Institute was established in 1959 to provide an interdisciplinary research facility and graduate education in enterology. The research program correlates different fields, such as botany, zoology, bacteriology, physics, chemistry and clinical investigation, in problems concerning the alimentary canal and nutrition. The policy of the Institute since its inception is to encourage interdepartmental activity, as well as integrate interdisciplinary research in relation to the digestive system.

McGill University

Faculty of Graduate Studies and Research 1976 — 77

Section "E"

Physical Sciences and Engineering

NOTE: Courses marked with an asterisk (*) are not offered in 1976-77. The letters, which form part of course numbers, have the following significance:
A — Fall term course
B — Winter term course
L — Summer session — part I
C — Summer session — part II
D — Full session course (Fall and Winter terms)

The official McGill University mailing address is:
McGill University, P.O. Box 6070, Station A
Montreal, Quebec, Canada H3C 3G1

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E1 SCHOOL OF ARCHITECTURE

STAFF

Professors — JOHN BLAND; PETER COLLINS; NORBERT SCHOENAUER *(on leave);* STUART WILSON
Associate Professors — BRUCE ANDERSON; DEREK DRUMMOND *(Acting Director);* BRIAN McCLOSKEY; JOHN SCHREIBER; RADOSLAV ZUK
Assistant Professors — ARTHUR ACHESON; WITOLD RYBCZYNSKI

REQUIREMENTS FOR THE M.Arch. DEGREE

The Master of Architecture degree is a post-professional degree and is offered in the areas of Architectural Design and Housing. Students holding the McGill B.Arch. degree or equivalent professional qualification with at least a Cumulative Grade Point Average of 3.0, are eligible to proceed to the M.Arch. degree.

N.B. Information concerning duration of program, documents required of applicants, etc. may be obtained from the Secretary of the School of Architecture. The application deadline is March 15.

COURSES

ARCHITECTURAL DESIGN

Students in Architectural Design are required to complete 30 credits of course work which must include Architectural Design I and II, Graduate Seminar I and II and additional courses to be approved by the thesis adviser. In addition they are required to submit a thesis approved by the Director of the School and by the Faculty.

HOUSING

Students in Housing are required to complete 30 credits of course work which must include one of the following courses, Urban Housing I and II, Minimum Cost Housing I and II, Shelter Systems for Developing Societies I and II or Community Design Workshop I and II, as well as the Graduate Seminar I and II and additional courses to be approved by the thesis adviser. In addition, they are required to submit a thesis approved by the Director of the School and by the Faculty.

* **301-205A HISTORY OF HOUSING.** (2 hours).
Professor Schoenauer

301-610A, 301-611B ARCHITECTURAL DESIGN I, II. (2 hours tutorial and studio work).
Professors Bland, Zuk and Staff

301-615A, 301-616B GRADUATE SEMINAR I, II. (2 hours).
Staff and Visitors

* **301-620A, 301-621B URBAN HOUSING I, II.** (2 hours tutorial and studio work).
Professor Schoenauer

* **301-625B HOUSING THEORY** (2 hours).
Professor Schoenauer

301-630A, 301-631B MINIMUM COST HOUSING I, II (2 hours tutorial and studio work).
Professor Rybczynski

301-640A,301-641B SHELTER SYSTEMS FOR DEVELOPING SOCIETIES I, II. (2 hours tutorial and studio work).
Professor McCloskey

301-644C SHELTER FIELD OPERATIONS. (Supervised field work).

* **301-650A, 301-651B COMMUNITY DESIGN WORKSHOP I, II.** (2 hours tutorial and studio work).
Professor Baker

E2 BIOMEDICAL ENGINEERING UNIT

STAFF

Associate Professor — J.S. OUTERBRIDGE *(Director);* M.C. MACKEY
Assistant Professors — R. DEMERS; H.C. LEE; D.H. MOSCOVITCH; J.L. NEAL.
Lecturers—T.R. FENTON; J. IVES; R. POULSEN; C.J. THOMPSON

The Unit provides opportunities for students from various backgrounds to pursue interdisciplinary studies in engineering and medicine. The program has been structured mainly for engineers, but applicants from the biological and medical sciences are encouraged. Graduate students for the M.Sc., M.Eng., and Ph.D. degrees will be registered in the Faculty of Graduate Studies and Research through appropriate departments.

Current research in the Unit is concerned with neuromuscular control, especially in posture and eye movement; physiology of vestibular, auditory and mechano-receptors; neurol communication theory; diagnostic techniques and signal processing in otology, encephalography and cardiology; sensory aids; computer applications in medicine and medical research.

Opportunities for biomedical engineering research also exist in a number of departments in the Faculties of Engineering and Medicine.

COURSES FOR HIGHER DEGREES

Note that all courses are not necessarily given every year. Prospective students are advised to inquire in September for details (Local 4328).

399-611B BIOLOGICAL CONTROL SYSTEM THEORY. (3 lectures, second term). Control system structure and information flow: homeostasis and neuromuscular systems; neuromuscular control, locomotion, oculomotor system, respiration, the human operator, thermo-regulation, cardiovascular control, endocrine control systems; adaptive and optimizing control structure and theory, performance criteria, growth, positive feedback and mutual causality.

399-613B SENSORY COMMUNICATION THEORY. (3 lectures, second term). Sensory receptors and neural coding; signal transmission and aspects of information processing in the vestibular, auditory, and visual systems; neural modelling; methods of pulse frequency modulation; analysis of multi-unit multipath neural systems; information processing in theoretical neural networks. Student projects.
Professor Lee

399-621A ENGINEERING BIOPHYSICS. (3 lectures, second term). Biochemical thermodynamics; criterion for equilibrium; phase equilibrium; chemical reaction equilibrium; the equilibrium constant, electro-chemical cell potentials, ATP degradation; chemical kinetics; fluid flow; mass transfer; biological role of water; bio-macromolecules; proteins, nucleic acids, polysaccharides, polyelecrolytes; biological effects of ionizing radiation; buffers, osmotic pressure, acid-base balance.
Professor Neal

* **399-622B ENGINEERING BIOPHYSICS** (3 lectures, first term). Membranes; structure, electrical properties, passive transport, active transport; models of membrane; nerve conduction. Biological control at molecular level. Microscopy. X-ray diffraction. Radioactivity. Biophysical instrumentation and measurements.

399-623B PRINCIPLES OF MEDICAL SCIENCE. (2 lectures, second term; prerequisite: Physiology 552-211D or equivalent). This course is designed to acquaint engineers with the principles and techniques of clinical practice and research, emphasizing those areas where bioengineering may contribute. Sessions are held in the McGill-associated hospitals, each led by a medical specialist. Specialized areas studied include: diagnosis; iron metabolism; ECG's pacemakers and intensive-care cardiac units; respiratory function, disease and xenon measurements; artifical dialysis; general and orthopedic surgery.
Staff

399-631B BIOMEDICAL ENGINEERING TECHNIQUES AND INSTRUMENTATION. (3 lectures second term). Selected topics in the area of application of technology, systems theory and computer science to problems in health care. The level of presentation will assume adequate mathematical and technological background, including differential equations, transform techniques, basic instrumentation and computer programming. The material presented in this course changes every year allowing in-depth exploration of different areas of biomedical engineering activity. Major areas of interest are methods of bio-signal-analysis, computer evaluation of ECG, industrial engineering methods in hospitals, computer application in clinical laboratories and intensive care units, health information systems.

399-641A SYSTEM CONCEPTS AND COMPUTER APPLICATIONS FOR BIOLOGY AND MEDICINE. (2 lectures, 2 laboratories, first term). Basic concepts and methods necessary for the application of computer and system techniques in physiology and medicine. The course is designed to enable the life scientist to utilize recent practical and theoretical advances in engineering and data analysis. In the laboratories, participants will be given the opportunity to use various computers and work on particular problems of their choice.

E3 DEPARTMENT OF CHEMICAL ENGINEERING

STAFF

Professors — W.J.M. DOUGLAS *(Chairman);* J.M. DEALY; M.R. KAMAL; G.A. RATCLIFF; M.E. WEBER
Associate Professors — T.J. BOYLE; J.M. CHARRIER *(on leave)*; O.M. FULLER; J.R. GRACE; J.H. VERA;
Assistant Professors — A.S. MUJUMDAR; B. VOLESKY
Special Lecturers — M. AVEDESIAN; N.E. COOKE; F. EL HOSSEINY; R. LEVESQUE; A. RUDZINSKI
Senior Research Associate — W.H. GAUVIN
Research Associate — J. BRUNET
Associate Members — H.L. GOLDSMITH *(Experimental Medicine);* J.L. NEAL *(Paediatrics)*

ADMISSION

Advanced courses and laboratory facilities are available for graduate study leading to the M.Eng. and Ph.D. degrees in Chemical Engineering. Before making formal application for admission to the Dean, applicants should write to the Chairman of the Admissions Committee of the Department, from whom additional information on Departmental research and on financial support is available. Applications for September admission are normally received in February and, in most cases, decisions are made on admissions in April.

REQUIREMENTS

M.Eng. Degree

A student may satisfy the requirements for the degree by completing one of the following options:

A) 45 credits including a minimum of 15 credits in courses of which at least 12 credits are graduate chemical engineering courses. The balance of the requirements should be devoted to a research project leading to the submission of a thesis.

B) 45 credits including at least 24 credits of graduate chemical engineering courses and at least three approved courses outside the Department of Chemical Engineering selected in one area to constitute a "minor". The student is required to devote 6 to 12 credits to a chemical engineering design or research project leading to a project report. At least one full session (or two half sessions) of resident study at McGill University is required for this degree. This is a minimum requirement, and it will usually require more than this period to complete the work for the degree.

Ph.D. Degree

Candidates with a bachelor's degree in chemical engineering normally register for the M.Eng. degree in the first instance.

Candidates with an acceptable master's degree or equivalent from another university will normally proceed directly to the Ph.D. degree. The course work undertaken by a Ph.D. candidate will be decided in the light of the student's academic qualifications, research requirements and interests.

Minimum time requirement is two years beyond the M.Eng. (or equivalent) degree.

General

Academic activities for graduate students are coordinated by the Graduate Studies Advisory Committee (GSAC), composed of three staff members appointed by the Department Chairman and three graduate students elected by the students. This committee provides a forum for all matters involving graduate student/staff interactions.

There is no foreign language requirement for either degree. All students must demonstrate proficiency in digital computer programming and give one or more research colloquia.

RESEARCH

Research may be undertaken in many branches of Chemical Engineering and related fields. Current research projects are in the following areas: fluid and particle dynamics including fluidization and particulate removal from gases and liquids; heat transfer; mass transfer; coupled transport processes including spray drying; thermodynamics and transport properties; chemical reaction engineering; plasma reactor studies; simulation and control; environmental, biochemical and biomedical engineering; polymer engineering and rheology.

The Department has two professionally-staffed workshops, one specializing in mechanical construction, the other in electronics. In addition, a student shop and a dark-room are available. Among the special-purpose laboratories are two constant-temperature rooms.

Specialized equipment in the Department includes: a horizontal and a vertical wind tunnel, turbulence measurement and analysis equipment, a laser doppler anemometer system, a Mach-Zender interferometer, d.c. arc and r.f. induction plasma generators and reactors, thermal diffusivity apparatus, differential scanning calorimeter, thermogravimetric analyser, Instron capillary rheometer, cone-and-plate viscometer, Instron mechanical tester, Rheometrics Mechanical Spectrometer, injection molding machine, extruder, high speed cine camera, photo-optical data analyser, particle counter, continuous dilution calorimeter and total pressure apparatus for thermodynamic measurements, fermenters with automatic control modules, Total Organic Carbon Analyzer, sterilizerautoclave. The Department has a complete range of analytical equipment including UV, IR and atomic absorption spectrometers and a variety of gas chromatography apparatus.

A General Electric GEPAC 4020 Computer is used for data logging and data processing. This computer can accept many analog signals simultaneously from experiments in the laboratories. An analog computer and a real-time minicomputer are available in the Department.

COURSES FOR HIGHER DEGREES

302-594B FERMENTATION ENGINEERING. 3(2-0-7). Engineering Aspects of biochemical and microbiological processes. Design and scale-up of fermentation equipment. Oxygen transfer. Instrumentation. Agitation and aeration. Sterilization techniques. Recovery and application of enzymes. Immobilized enzyme process. Separation techniques including reverse osmosis and ultrafiltration.
Professor Volesky

302-611A HEAT, MASS AND MOMENTUM TRANSPORT. 3(2-0-7). Unified treatment of the transport of mass, momentum and energy.
Professor Mujumdar

302-614C APPLIED TRANSPORT PHENOMENA. 3(2-0-7). Transport phenomena strategy, formulation of physical and mathematical models; analytic, numerical and approximate solutions; application to problems from a range of industries.
Professor Mujumdar

302-621B THERMODYNAMICS. 4(3-0-9). Review of thermodynamics principles. Foundations of thermodynamics with application of its methodology in the field of multicomponent, multiphase, multireaction systems. Detailed study of equilibrium and stability of thermodynamic systems.
Professor Vera

302-631A FOUNDATIONS OF FLUID MECHANICS. 4(3-0-9). Review of basic concepts and equations; flow of inviscid fluids including conformal mapping and axisymmetric flows; creeping flows; empirical and statistical approaches to the study of turbulence; boundary layer theory.
Professor Grace

302-641B CHEMICAL REACTION ENGINEERING. 3(2-0-7). Interpretation of chemical reaction data, especially for heterogeneous systems. Residence time, complete segregation, maximum mixedness, other advanced concepts. Reactor design.
Staff

302-652A,B DRYING: PRINCIPLES AND PRACTICE. 3(2-0-7). Fundamentals of drying. Psychrometry; absorption; transport phenomena in porous media; heat transfer to particles, beds and surfaces; evaporation from drops and surfaces; simultaneous heat and mass transfer; drying characteristics for batch and continuous drying. Industrial drying: applications to such areas as drying of paper, pharmaceuticals, food products, spray drying, freeze drying, fluidized bed drying. Design project.
Professor Douglas

302-653C ADVANCED PROCESS DESIGN. 3(2-0-7). Advanced techniques and concepts in the design of chemical processing plant and equipment.
Dr Cooke

302-661A MATHEMATICAL METHODS IN CHEMICAL ENGINEERING. 4(3-0-9). Calculus of variations, Pontryagin's, maximum principle, approximate solutions to differential equations, discrete maximum principle, selected applications.
Staff

302-662A COMPUTATIONAL METHODS IN CHEMICAL ENGINEERING. 3(2-0-7). Selected topics of value in chemical engineering including integration and solution of sets of differential equations, curve fitting and optimum-seeking methods.
Staff

302-663A,B SIMILITUDE, MODELS AND SCALING. 3(2-0-7). Determination of similarity criteria by dimensional and inspectional analysis; the regime concept, distorted models, quasi-similar models, analog modelling and differential scaling. These concepts and methods will be applied in cases that relate to boundary value problems in research and to scale-up of industrial processes.
Professor Fuller

302-681A POLYMER CHEMICAL ENGINEERING. 4(3-0-9). Application of chemical engineering fundamentals to the preparation and processing of polymers. Classification and characterization of polymers, reaction media and kinetics of polimerization, reactor design, viscoelasticity and rheology, processing techniques, extrusion, molding, composite formation, adhesion.
Professor Kamal

* **302-682B ENGINEERING PROPERTIES OF POLYMERIC MATERIALS. 4(3-0-9).** Mechanical and transport properties of non-crystallizing and crystallizing thermoplastics, rigid thermosets, fibers, films, elastometers and composites with particle and fiber reinforcement. Elasticity, visco-elasticity, ultimate properties, diffusion of liquids and gases, thermal and electrical properties.
Professor Charrier

302-691D SELECTED TOPICS IN CHEMICAL ENGINEERING.
Staff

302-695A,B,C PROJECT IN CHEMICAL ENGINEERING. (6) Independent work under the general direction of a full-time staff member of the Chemical Engineering Department, on a problem of industrially-oriented design or research. The work must lead to a comprehensive project report.
Staff

302-696A,B,C EXTENDED PROJECT. (6) Extended independent work on a problem of industrially-oriented design or research, leading to a comprehensive project report.
Staff

302-712B HEAT TRANSFER. 3(2-0-7). Advanced treatment of heat transfer in convection, boiling and in particulate systems. Application of numerical methods and correlation of data.
Professor Weber

302-713B MASS TRANSFER. 3(2-0-7). Study of diffusive and convective mass transfer across interfaces. Turbulent transport and the transport of ions. Film and penetration theories and methods of predicting mass transfer rates for bubbles, drops and plane surfaces.
Professor Weber

302-732B RHEOLOGY OF LIQUIDS. Rational mechanics, formulation of rheological models, purely viscous fluids, linear and nonlinear viscoelasticity, viscometric flows, extensional flows, experimental methods; laboratory demonstrations.
Professor Dealy

302-733B MIXING. 3(2-0-7). Basic definitions and concepts; molecular, eddy and bulk diffusion; solids mixing, macromixing and micromixing and their influence on conversion and selectivity in chemical reactors; reactor models; mixing of viscous liquids; turbulent mixing in stirred tanks.
Professor Grace

302-742A INTRODUCTION TO CATALYTIC PROCESSES. 3(2-0-7). Physical structures of solid catalysts, effects of structure on selectivity and activity, catalyst life and regeneration, standard methods of catalyst preparation, special preparation methods, properties of catalysis for homogeneous reactions, examples of solid catalysis in the chemical industry.
Professor Fuller

302-751B FLUIDIZATION. 3(2-0-7). Incipient fluidization. Equations of continuity and motion. Regimes of fluidization. Liquid-fluidized beds. Bubble phenomena. Mixing. Heat and mass transfer. Elutriation. Chemical reactor models. Design and scale-up. Applications. Spouted and three phase systems.
Professor Grace

302-771A PROCESS DYNAMICS AND CONTROL. 3(2-0-7). Mathematical modelling of industrial processes. Dynamic characteristics of models and real processes. Modal analysis and control of processes.
Professor Fuller

302-783A SPECIAL TOPICS IN POLYMER ENGINEERING. Seminars and discussion on selected advanced problems of polymer engineering.
Professors Kamal, Charrier and Dealy

302-793A,B BUBBLES, DROPS AND PARTICLES. 3(2-0-7). Mechanics and transfer processes of gas bubbles, liquid drops and solid particles in motion through fluids. Analogies and important differences between the three types of particle. Motion and transfer processes at low and high Reynolds and Peclet numbers, wall effects, influence of surface active impurities, and other interfacial effects, turbulence effects, unsteady motion, effects of transpiration.
Professors Grace and Weber

E4 DEPARTMENT OF CHEMISTRY

STAFF

Professors — J.H. HARROD *(Chairman)*, B. BELLEAU; I.S. BUTLER; G.C.B. CAVE; J.T. EDWARD; A. EISENBERG; B.C. EU; D.F.R. GILSON; D.N. HARPP; G.E. JUST; S.G. MASON; M. ONYSZCHUK; D. PATTERSON; A.S. PERLIN; R.F. ROBERTSON; L.E. ST-PIERRE; M.A. WHITEHEAD; C.A. WINKLER; L. YAFFE

Associate Professors — T.H. CHAN; P.G. FARRELL; J.M. FRESCO; W.C. GALLEY; A.E. GROSSER, J.J. HOGAN; K.K. OGILVIE; D.J. SIMKIN

Assistant Professors — B.C. SANCTUARY; A.G. SHAVER

Senior Research Associate — D.A.I. GORING

Research Associates — H. BOLKER; D.G. GRAY; R. ST. JOHN MANLEY; A.A. ROBERTSON

Associate Members — G. DONNAY *(Crystal Chemistry)*; H.L. GOLDSMITH *(Medicine)*

ADMISSION

The minimum academic standard for admission is normally a high second class standing. Applicants from other institutions should have an academic background equivalent to that of a McGill graduate in honours chemistry or major in chemistry. If possible candidates should specify the field of research in which they are interested.

All inquiries concerning graduate work in the Department of Chemistry should be addressed to the Chairman of the Admissions Committee, Department of Chemistry.

REQUIREMENTS

M.Sc. and Ph.D. Degrees

1. Students must take such examinations as may be required in (a) assigned courses given in the Department of Chemistry, (b) assigned cognate courses given in other departments, (c) assigned foreign languages.
   Courses are assigned after taking into consideration the student's previous training and research interest.
2. Students must complete successfully a research project and submit an acceptable thesis thereon.
3. Students must satisfy the examiners in an oral examination on the thesis and related subjects (required only of candidates for the Ph.D. degree).
4. All the usual requirements of the Faculty of Graduate Studies and Research must be satisfied.

FINANCIAL ASSISTANCE

Financial assistance for accepted graduate students who do not hold fellowships or scholarships is normally available in the form of laboratory demonstratorships/assistantships, and occasionally by payment from research funds. Graduate students to devote between 6-8 contact hours per week during the academic session of their teaching duties. Financial assistance during the four summer months is provided from research funds.

EXAMINATIONS IN CHEMISTRY

1. Examinations in assigned courses are normally taken by the candidates in January and May. In special circumstances, and with the permission of the Department and the Faculty, they may be taken in September.
2. A candidate for the Ph.D. degree shall pass all such examinations, other than those in certain special courses, before the final year, except in special circumstances and then only with the approval of the Department.

302-631A FOUNDATIONS OF FLUID MECHANICS. 4(3-0-9). Review of basic concepts and equations; flow of inviscid fluids including conformal mapping and axisymmetric flows; creeping flows; empirical and statistical approaches to the study of turbulence; boundary layer theory.
Professor Grace

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Staff

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Professor Douglas

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Dr Cooke

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Staff

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Staff

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Professor Fuller

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Professor Kamal

* **302-682B ENGINEERING PROPERTIES OF POLYMERIC MATERIALS. 4(3-0-9).** Mechanical and transport properties of non-crystallizing and crystallizing thermoplastics, rigid thermosets, fibers, films, elastometers and composites with particle and fiber reinforcement. Elasticity, visco-elasticity, ultimate properties, diffusion of liquids and gases, thermal and electrical properties.
Professor Charrier

302-691D SELECTED TOPICS IN CHEMICAL ENGINEERING.
Staff

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Staff

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Staff

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Professor Weber

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Professor Weber

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Professor Dealy

302-733B MIXING. 3(2-0-7). Basic definitions and concepts; molecular, eddy and bulk diffusion; solids mixing, macromixing and micromixing and their influence on conversion and selectivity in chemical reactors; reactor models; mixing of viscous liquids; turbulent mixing in stirred tanks.
Professor Grace

302-742A INTRODUCTION TO CATALYTIC PROCESSES. 3(2-0-7). Physical structures of solid catalysts, effects of structure on selectivity and activity, catalyst life and regeneration, standard methods of catalyst preparation, special preparation methods, properties of catalysis for homogeneous reactions, examples of solid catalysis in the chemical industry.
Professor Fuller

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Professor Grace

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302-783A SPECIAL TOPICS IN POLYMER ENGINEERING. Seminars and discussion on selected advanced problems of polymer engineering.
Professors Kamal, Charrier and Dealy

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Professors Grace and Weber

E4 DEPARTMENT OF CHEMISTRY

STAFF

Professors — J.H. HARROD *(Chairman)*, B. BELLEAU; I.S. BUTLER; G.C.B. CAVE; J.T. EDWARD; A. EISENBERG; B.C. EU; D.F.R. GILSON; D.N. HARPP; G.E. JUST; S.G. MASON; M. ONYSZCHUK; D. PATTERSON; A.S. PERLIN; R.F. ROBERTSON; L.E. ST-PIERRE; M.A. WHITEHEAD; C.A. WINKLER; L. YAFFE
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Senior Research Associate — D.A.I. GORING
Research Associates — H. BOLKER; D.G. GRAY; R. ST. JOHN MANLEY; A.A. ROBERTSON
Associate Members — G. DONNAY *(Crystal Chemistry)*; H.L. GOLDSMITH *(Medicine)*

ADMISSION

The minimum academic standard for admission is normally a high second class standing. Applicants from other institutions should have an academic background equivalent to that of a McGill graduate in honours chemistry or major in chemistry. If possible candidates should specify the field of research in which they are interested.

All inquiries concerning graduate work in the Department of Chemistry should be addressed to the Chairman of the Admissions Committee, Department of Chemistry.

REQUIREMENTS

M.Sc. and Ph.D. Degrees

1. Students must take such examinations as may be required in (a) assigned courses given in the Department of Chemistry, (b) assigned cognate courses given in other departments, (c) assigned foreign languages.
   Courses are assigned after taking into consideration the student's previous training and research interest.
2. Students must complete successfully a research project and submit an acceptable thesis thereon.
3. Students must satisfy the examiners in an oral examination on the thesis and related subjects (required only of candidates for the Ph.D. degree).
4. All the usual requirements of the Faculty of Graduate Studies and Research must be satisfied.

FINANCIAL ASSISTANCE

Financial assistance for accepted graduate students who do not hold fellowships or scholarships is normally available in the form of laboratory demonstratorships/assistantships, and occasionally by payment from research funds. Graduate students to devote between 6-8 contact hours per week during the academic session of their teaching duties. Financial assistance during the four summer months is provided from research funds.

EXAMINATIONS IN CHEMISTRY

1. Examinations in assigned courses are normally taken by the candidates in January and May. In special circumstances, and with the permission of the Department and the Faculty, they may be taken in September.
2. A candidate for the Ph.D. degree shall pass all such examinations, other than those in certain special courses, before the final year, except in special circumstances and then only with the approval of the Department.

RESEARCH IN CHEMISTRY

Members of the Department of Chemistry are active in directing research in the following fields:

Analytical

Molecular complexes; solvation and polymerization in non-aqueous solutions; complex ions; metal ion separations; hydration and solvation in solvent extraction; kinetic processes in analytical chemistry; specific ion electrodes.

Bio-organic

Enzyme chemistry; protein and nucleic acid structure and function; active site stereochemistry; molecular basis of regulation and pharmacological action.

Biophysical

Excited electronic states of proteins and nucleic acids; spectroscopic probes of biopolymer conformation; sensitized photochemistry in biopolymers; dynamics of protein and nucleic acid conformations.

Colloid and Polymer

Monomolecular layers; solution properties of high polymers; molecular morphology; electrokinetics; adsorption; rheology and stability of dispersions; phase transitions in polymers; polymer reinforcement; radiation effects and solid-state polymerization; mechanisms of polymerization reactions; wetting and spreading; the glass transition; molecular dynamics and polymer properties; ionic polymers; cellulose and paper; carbohydrate biopolymers; pollution abatement; polymer melt rheology; synthetic latices; rheo- and electro-optical phenomena.

Inorganic

Germanium and silicon chemistry; coordination of Group III, IV and V halides; inorganic polymers; I.R. laser Raman, N.M.R., N.Q.R., and mass spectra of inorganic and organometallic complexes; inorganic reaction mechanisms; catalysis.

Organic

Synthesis and structure of heterocyclic compounds; steroids; natural products; carbohydrates; cellulose; lignin; reactions in strong acids; photo-chemistry; plant-growth regulators; organic sulphur, phosphorus, and silicon chemistry; stereochemistry; $_{13}C$ NMR; reaction mechanisms; charge transfer complexes; new synthetic methods; conformational analysis; solvation effects; substituent effects; polymer supports.

Physical

Molecular beams; laser excited elementary reactions; matrix isolation of radicals; high resolution and "wide line" N.M.R.; Mössbauer Effect spectroscopy; nuclear quadrupole resonance; electron spin resonance; emission and absorption spectroscopy; addition agents in the electrodeposition of metals.

Radiochemistry and Nuclear Chemistry

Elucidation of nuclear reactions using the McGill synchrocyclotron and Chalk River nuclear reactors; fission and spallation reactions; decay scheme studies; characteristation of new radioactive species.

Theoretical

Ab initio and semi-empirical molecular orbital theory; d-orbitals; population analysis; self-consistent coulomb and overlap integral calculations; atom and molecule scattering theory; theory of transport processes; chemical kinetics in gases and liquids.

COURSES FOR HIGHER DEGREES

Advanced Undergraduate Courses

Any of the following courses may be required of a student who is admitted to the Graduate Faculty if the equivalent has not been taken previously. Descriptions of these courses may be found in the Faculty of Science Announcement.

180-352B STRUCTURAL ORGANIC CHEMISTRY. (3 lectures).

180-353A SURFACE CHEMISTRY. (1 lecture).

180-356A INTRODUCTORY QUANTUM CHEMISTRY. (2 lectures).

180-372B SYNTHETIC ORGANIC CHEMISTRY. (3 lectures).

180-373B MOLECULAR SPECTROSCOPY. (2 lectures).

180-381A CHEMISTRY OF THE TRANSITION ELEMENTS. (3 lectures).

180-383B INTRODUCTORY STATISTICAL MECHANICS. (1 lecture).

180-387D ANALYTICAL CHEMISTRY. (1 lecture and 3 hours laboratory).

180-392D INTEGRATED INORGANIC/ORGANIC LABORATORY. (4 hours).

180-404B PHYSICAL CHEMISTRY OF BIOPOLYMERS.

180-452A PHYSICAL ORGANIC CHEMISTRY.

180-455B INTRODUCTORY POLYMER CHEMISTRY.

180-457B INSTRUMENTAL METHODS OF ANALYSIS.

180-475A CHEMICAL KINETICS.

180-477A ELECTROANALYTICAL CHEMISTRY.

180-481A,B MODERN TOPICS IN INORGANIC CHEMISTRY.

180-482A ADVANCED ORGANIC CHEMISTRY.

180-485A SURFACE AND COLLOID CHEMISTRY.

180-487A SELECTED TOPICS IN MODERN ANALYTICAL CHEMISTRY.

180-493A INTRODUCTION TO STATISTICAL THERMODYNAMICS.

180-497B ANALYTICAL SPECTROSCOPY.

Graduate Courses

180-602A NUCLEAR MAGNETIC RESONANCE SPECTROSCOPY. A general survey of nuclear magnetic resonance spectroscopy. The analysis of first and second order spectra. Theory of chemical shifts and coupling constants. Applications of n.m.r. in various areas of chemistry will be discussed.
Professor Gilson

180-603B INFRARED AND RAMAN SPECTROSCOPY. Applications of group theory to vibrational spectroscopy; theory of molecular vibrations; determination of molecular structures and vibrational assignments; instrumental design and experimental techniques; "group" frequencies; recent developments.
Professor Butler

180-605B ELECTRONIC SPECTROSCOPY. Theory of electronic spectra of molecules including organic molecules and inorganic complexes. Energy levels, molecular symmetry and selection rules; vibrational interactions with electronic states. A discussion of current experimental techniques including absorption, fluorescence, phosphorescence, circular dichroism, magnetic circular dichroism, and photo electron spectroscopy.

180-621A RECENT ADVANCES IN ORGANIC CHEMISTRY. A systematic survey of the mechanisms of the most common organic reactions, from studies of reactions in the current literature. Reference text; R. Breslow, "Organic Reaction Mechanisms" (Benjamin).
Professor Chan

180-622A HETEROCYCLIC COMPOUNDS. The properties and reactions of heterocyclic compounds, especially aromatic derivatives, and considerations of the mechanisms of their reactions. The spectroscopy of heteroaromatic compounds.
Staff

180-623B ORGANIC STEREOCHEMISTRY. Recent advances in conformational analysis, with particular reference to steroids, alkaloids, and carbohydrates, application of optical rotation, rotary dispersion, u.v., i.r., and n.m.r. spectroscopy to conformational problems.
Professors Edward and Perlin

180-624B SPECIAL TOPICS IN ORGANIC CHEMISTRY. An advanced course in mechanistic and/or structural organic chemistry, together with detailed consideration of special topics; these topics will be decided just prior to the session and may include photo-chemistry, organic chemistry of sulphur and phosphorus, mass spectrometry, etc. Further details may be obtained from the instructor.
Professor Farrell and Staff

180-625B ORGANOMETALLIC CHEMISTRY. The course covers topics of current interest in the field. Intended for advanced graduate students who are doing research in organometallic chemistry.
Professor Chan and Staff

180-626D CHEMICAL CONTROL OF LIFE PROCESSES. Topics of current interest in medicinal chemistry; molecular pharmacology; the chemical synthesis and mode of action of drugs; receptor chemistry; drug design; chemotherapy; active site chemistry.
Professor Belleau and Staff

180-631D SELECTED TOPICS IN ANALYTICAL CHEMISTRY. A directed reading course with individual student-professor conferences, and intended mainly for students specializing in analytical chemistry. Topics are chosen to meet the individual needs of each student.
Professors Cave and Fresco

180-645A QUANTUM MECHANICS. Brief review of solvable problems in nonrelativistic quantum mechanics; perturbation theories, time-dependent and time-independent; angular momentum, spin and rotation group; semiclassical theory of radiation; light scattering. Rayleigh and Raman; theory of scattering; second quantization; theory of many-electron systems and its application to molecules and atoms.
Professor Whitehead

180-646A STATISTICAL THERMODYNAMICS. Fundamental hypotheses; microcanonical, canonical, grand canonical ensembles; ideal gases, monatomic, diatomic, and polyatomic; chemical equilibria; Meyer's theory of cluster expansion; distribution functions for liquids; lattice statistics; quantum statistics.
Professor Eu

180-666D SPECIAL TOPICS. Critical and original essays are required on various subjects of current interest in chemistry.
Staff

180-671A ORGANIC CHEMISTRY OF SYNTHETIC AND NATURAL POLYMERS. A survey presenting an integral view of polymer chemistry with equal emphasis on both natural and synthetic polymers. All biopolymers are included: polysaccharides, proteins, nucleic acids, rubbers, and lignins.
Dr. Bolker

180-672A THE POLYMER SOLID STATE. Melting and crystallization phenomena in linear high polymers; crystal structure, defects, and morphology in macromolecular crystals.
Dr. Manley

180-673B POLYMERS IN SOLUTIONS. Thermodynamics of regular and of polymer solutions; osmotic pressure; phase separations; polymer configurations; light scattering; ultracentrifugation; viscometry; gel permeation chromatography; polyelectrolytes.
Dr. Goring and Professor Patterson

180-674B INTRODUCTORY PHYSICAL CHEMISTRY OF POLYMERS. A survey course on the structure of polymers; kinetics and mechanisms of polymer synthesis; molecular weight distributions; polymer configurations and the thermodynamics of polymer solutions; rubber, elasticity, osmometry and viscosity.
Professor St. Pierre

* **180-675B MECHANICAL PROPERTIES AND RHEOLOGY OF POLYMERS.** Mechanical properties of polymers; glass transition, visco-elasticity, rubber elasticity, failure. Relation to molecular properties; mechanical spectroscopy, dielectric properties, birefringence.
Dr. Robertson and Professor Eisenberg

180-681A SELECTED TOPICS IN RADIOCHEMISTRY. This course is intended for graduate students who may be using radio-active tracers in their future work. The fundamentals of radioactivity are discussed, types of radiations which are encountered, methods of measurement of these radiations, radio-chemical separations, design of radio-chemical laboratories and health precautions to be taken. In addition to this, some lectures will be devoted to selected topics such as activation analysis, 14C dating, determination of the age of the earth by radioactive methods, energy production in the sun and stars, etc.
Professor Yaffe

180-682D NUCLEAR CHEMISTRY. Radioactivity; nuclear models; liquid drop, shell, Nilsson, and Fermi gas; a-decay; b-decay; y-decay; nuclear reactions, nuclear fission.
Professor Hogan

180-720D COLLOQUIUM. Each student is required to participate in Research Colloquia which are held regularly in the department. These involve the presentation and discussion of papers dealing either with the student's own research or with recent research publications.

E5 DEPARTMENT CIVIL ENGINEERING AND APPLIED MECHANICS

STAFF

Professors — P.J. HARRIS; R.G. REDWOOD *(Chairman);* B. STAFFORD SMITH; R.N. YONG
Associate Professors — R.G. COX; R.D. JAPP; M.S. MIRZA; J.C. OSLER; A. PAKALNINS; S.B. SAVAGE; D.A. SELBY; C.J. TURKSTRA
Assistant Professors — V.H. CHU; A.R. COOK; F.L. HART; E. McKYES; D. MITCHELL; D. PANAGIOTAKOPOULOS; G.R. THOMAS

Advanced courses of instruction and laboratory facilities are available for engineering graduate students desiring to proceed to the degrees of M.Eng. and Ph.D.

Graduate studies and research are at present being conducted in the fields of structures and structural mechanics, fluid mechanics and hydraulics, soil behaviour, soil mechanics and foundations, traffic and transportation engineering, sanitary and municipal engineering, and urban and environmental systems engineering.

ADMISSION

The general rules of the Faculty apply and are detailed in the *General Information and Faculty Regulations* section. The minimum academic standard for admission is normally a cumulative Grade Point Average of 3.0 or better.

REQUIREMENTS

M.Eng. Degree

Candidates may satisfy the requirements for this degree by following one of two options; in Option A, 30 credits of course work are normally required, plus a research thesis; in Option B, a total of 45 credits are required, consisting of 36 to 40 credits of course work, plus a project. All 600 level courses have a weight of 4 credits, with the exception of 303-664A, which is weighted at 5 credits. It is usually required that a student take a course in mathematical methods appropriate to his interests, and other courses must be determined in consultation with the candidate's director of studies or research. In Option A a thesis describing the candidate's research is to be submitted in accordance with the rules of the Faculty of Graduate Studies and Research. At least one full session (or two half sessions) of resident study at McGill University is required for the degree. This is a minimum requirement, and usually a longer period will be necessary.

Ph.D. Degree

Candidates normally register for the M.Eng. degree, Option A, in the first instance. However, candidates

who have a Master's degree acceptable to the Department may be considered for direct registration for the Ph.D. degree. The Ph.D. program consists of a research project and courses as required to develop the candidate's background. Candidates are expected to take a comprehensive preliminary oral examination within the first year of their Ph.D. registration. They must fulfil the requirements outlined in the general rules of the Faculty. There is no foreign language requirement.

COURSES FOR HIGHER DEGREES

Not all of the courses listed below are given each year; most courses are offered every two years. A list of courses to be offered is made available in the Department prior to each term.

303-540A URBAN TRANSPORTATION PLANNING. Urban travel demand characteristics; transportation goals and objectives; planning, design and co-ordination of street systems, mass transit networks, and parking facilities; economic and environmental issues; urban goods movement; development and evaluation of transport alternatives.
Professor Cook

303-602B FINITE ELEMENT ANALYSIS. Prerequisite: 303-608A). Development of simple and high order two and three dimensional, plate bending and shell elements. Displacement models, stress and hybrid models. Applications with emphasis on the static solution of two and three dimensional solids.
Professor Thomas

303-603B STRUCTURAL DYNAMICS. General theory of structural response to periodic and aperiodic forces. Spectrum methods. Numerical methods. Earthquake analysis.
Professor Turkstra

303-604B THEORY OF PLATES AND SHELLS. Analysis of stress and deformation of plates bent by transverse loads. Plates on elastic supports. Energy and approximate methods of solution. Anisotropic plates. Membrane theory of shells. General theory of cylindrical shells. Symmetrical bending of shells fo revolution. Applications of theory to plate and shell structures.
Professor Harris

303-605A STABILITY OF STRUCTURES. Beams subject to axial and lateral loads. Columns with various end conditions. Buckling of frames. Buckling beyond the proportional limit. Columns of variable cross section. Latticed columns. Lateral buckling of beams. Buckling of plates and shells.
Professor Redwood

303-606B PLASTIC STRUCTURAL ANALYSIS. Basic theorems. Limit analysis and elastic-plastic deflections of frames. Frame instability and strain hardening effects. Non-proportional loading. Minimum weight design.
Professor Redwood

303-607B DESIGN IN METALS. Physical properties of metals, residual stresses, design concepts. Column theories, column strength, beam-column design, structural frames. Plastic design concepts, ultimate strength, axial forces with bending, shear forces with bending. Economic design considerations.
Professor Redwood

303-608A ADVANCED STRUCTURAL ANALYSIS. Advanced topics in matrix analysis, substructures, transfer matrices, rank technique, mixed methods, finite differences applied to continua, computation methods, structural optimization, fully stressed design, minimum weight design by mathematical programming.
Professor Thomas

303-609A STRUCTURAL SAFETY. Structural safety analysis and code formulation based on probabilistic models and decision concepts. Elementary reliability analysis — classical and approximate solutions. System reliability. Formulations suitable for implementation in codes. Applications in modern building codes.
Professor Turkstra

303-610B SPECIAL TOPICS IN STRUCTURAL MECHANICS. Special problems in the theory and design of structures. These may include topics in the theories of elasticity and plasticity and advanced theories of shell structures.

303-618A DESIGN IN CONCRETE I. Concrete physical properties, creep, shrinkage; review of ultimate strength design; combined loadings; design of frames and flat plates limit design, yeild line theory; prestressed concrete, partial prestressing and load balancing. The course will include group projects.
Professor Mirza

303-619B DESIGN IN CONCRETE II. Deisgn topics will be selected from among the following: shear walls and deep beams, slender members, applications of probabilistic concepts to structural concrete design, analysis and design of folded plates, cylindrical shells, tanks, arches and bridges, special topics in prestressed concrete.
Professors Harris and Mirza

303-620B STRUCTURAL MODELS. Structural model; direct and indirect models; demonstration models; theory, similitude and dimensional analysis; materials, fabrication, loading and instrumentation techniques; confidence levels; research projects to illustrate the use of qualitative and quantitative models to study structural behaviour.
Professor Mirza

303-621A BEHAVIOUR OF CONCRETE STRUCTURES. Behaviour of reinforced and prestressed concrete members in flexure, shear, torsion and combined modes of loading. Forces at steel-concrete interface. Crack propagation and failure.
Professor Mirza

303-642B TRANSPORTATION SYSTEMS ANALYSIS. Quantitative analysis and forecasting of urban and regional travel demand; trip generation, trip distribution, Modal split analysis, trip assignment, and transport-related land use models; design and synthesis of transportation systems.
Professor Cook

303-645B TRAFFIC FLOW AND CONTROL. (Prerequisite: a course in probability and statistics). Characteristics of traffic flow, microscopic and macroscopic flow theories, theory and application of traffic control techniques, traffic signal systems, expressway surveillance and control.
Professor Cook

303-650A DISTRIBUTION AND COLLECTION SYSTEMS. Principles and practice of water transmission, distribution and storage design. Surface drainage and wastewater collection systems. Analysis, reinforcing and modification of existing systems. Economic aspects of systems and transmission.
Professor Pakalnins

303-651A THEORY OF WATER TREATMENT. Physical chemical and microbiological aspects of surface, ground and treated waters. Gravimetric, volumetric and instrumental analysis of water samples. Principles of conventional and advanced water treatment methods for public water supplies. Water conditioning for industrial uses. Synthesis of treatment operation to produce water of a specific gravity.
Professor Hart

303-652B THEORY OF WASTEWATER TREATMENT. Waste surveys, wastewater characteristics and laboratory analyses. Ecology metabolism and population kinetics of micro-organisms, and their role in the various waste treatment processes. Conventional and advanced physical, chemical and biological processes of domestic and industrial waste treatment.
Professor Hart

303-653A STREAM POLLUTION AND CONTROL. Physical and chemical pollution and bacterial contamination of surface and groundwaters. Environmental health aspects of pollution. Planning and practice of pollution surveys. Data analysis and reports. Analysis of stream water quality and waste discharge standards in North America and Europe. Correlation and control of the discharge conditions and the degree of water and wastewater treatment, domestic and industrial.
Professor Pakalnins

303-654B SANITARY ENGINEERING DESIGN. Complete problems in site selection, layout and design of water and wastewater treatment plants. Control and economic aspects of primary, secondary and tertiary plant operation.
Professor Pakalnins

303-655A WATER RESOURCES ENGINEERING. Legal, economic, conservational and technological aspects of the use of water resources. The concept of existing supplies and resource allocation. Planning factors and related problems of land use. Analysis of water quality management in North America and abroad.
Professor Pakalnins

303-656A SYSTEMS ANALYSIS ENGINEERING. Introduction to systems analysis and mathematical optimization; structuring and solution of mathematical programming models with emphasis on linear and dynamic programming; sensitivity analysis and trade-off among design factors; application of systems analysis techniques to the solution of complex problems in the private and public sectors.
Professor Panagiotakopoulos

303-664A MATHEMATICAL METHODS IN ENGINEERING RESEARCH. Vectors, tensors, and matrices and applications in engineering research; potential theory. Boundary value problems, integral transforms, asymptotic and similar solutions. Variational methods.
Professor Savage and Staff

303-665B APPLIED ELASTICITY AND TENSOR CALCULUS. Scalars, vectors and tensors; second order symmetric tensors, principal axes, eigenvectors and eigenvalues; the stress and strain tensors; homogeneous isotropic materials; plane stress and plane strain; stress functions in cartesian and polar coordinates; complex variable methods in two-dimensional elasticity; torsion of non-circular sections; strain energy methods; theories of elastic breakdown.
Professor Harris

303-666B URBAN AND ENVIRONMENTAL ENGINEERING SYSTEMS (Prerequisite: 303-656A and probability theory). Advanced topics in the application of mathematical programming techniques and probability theory to the solution of urban and environmental engineering problems.
Professor Panagiotakopoulos

303-667A PLASTICITY. Criteria for yeilding; Ideal behaviour, elastic-plastic, ideal plastic, rigid plastic; Non-ideal behaviour, work hardening, strain hardening; Physics of plastic behaviour, yield and failure; Principal stress space, ideal and non-ideal; Yield surfaces; Stability Postulates; Plastic Potential; St. Venant's Postulate; Plastic stress-strain relations, Levy-Mises, Prandtl-Reuss; Uniqueness; Limite Theorems.
Professor Yong

303-670B WATER WAVES AND ALLIED MOTIONS. Motions of seas and rivers and their interaction with bottom and shore; deep and shallow water surface waves of all types, dispersion and non-linearity; conservation equations, wave interaction; internal waves; inertial waves.
Professor Savage

303-672A HYDRAULICS I. Design of channels for non-uniform flow; computation of backwater curves, effect of ice and obstructions. Computations of unsteady flow in open channels; abrupt waves, flood waves, tidal propagation. Navigation locks: manifold design. Water intakes.
Professor Savage

303-673B HYDRAULICS II. Water hammer in pipe systems. Surge tanks: purpose, types and design. Turbines and turbine governing: design of hydraulic turbines; governing stability and response. Cavitation.
Professor Chu

303-674A FLUID MECHANICS OF POLLUTION I. Application of fluid mechanics to problems in water pollution control; Mixing, dilution and dispersion of pollutants discharged into lakes, rivers, estuaries, and oceans; Salinity intrusion in estuaries and its effects on dispersion; Biochemical oxygen demand and dissolved oxygen as water quality indicators; Mixing in stratified flow; Thermal pollution; Sewage disposal in the ocean outfall; Oceanic diffusion processes; Oil pollution.
Professor Chu

303-675A FLUID MECHANICS OF POLLUTION II. Application of fluid mechanics to problems of air pollution; Properties and sources of air pollution; Atmospheric turbulent diffusion; Characteristics of atmosphere boundary layers; Stable and unstable atmosphere; Aerodynamics of plumes; Wind tunnel modelling and similitude; Coagulation and setting of particles; Visibility and pollution.
Professor Cox

303-680A FUNDAMENTALS OF SOIL BEHAVIOUR. Physical and chemical properties of clays; clay-water interaction, soil structure, soil-water potential. Infiltration and diffusion, volume changes. Soil strength parameters, pore water pressures and parameters.
Professor Yong

303-681B ENGINEERING ASPECTS OF SOIL BEHAVIOUR. (Prerequisite: 303-680A). Consolidation phenomenon, shear strength of cohesive soils, granular soil strength, soil freezing, soil dynamics, creep properties. Equilibrium and compatibility. Yield criteria.
Professor Yong

303-682A APPLIED SOIL MECHANICS. Composition and properties of natural soils and rock; geologic processes of formation and alteration, site investigations, evaluation of engineering properties for design applications. Case records involving influence of in-situ properties on predicted versus actual performance. Compaction, statistical compaction control. Improvement of soil and rock properties.
Professor Osler

303-683B ADVANCED FOUNDATION DESIGN. Design of shallow foundations, bearing capacity and settlement, combined footings and rafts; eccentric and inclined loads, footings in slopes, machine foundations. Deep foundations; caissons and piers, piles, pile groups, tension piles. Tunnels and tunnel linings, flexible culverts. Earth pressures, retaining walls, sheeting and bracing, cofferdams. Case records of foundation performance including failures.
Professor Osler

303-684B GROUNDWATER AND SEEPAGE. Flow of incompressible fluids through porous media, fundamentals of groundwater flow, confined and unconfined flow, conformal mapping, graphical flow nets and the use of analogs, flow through earth structures, transient flow surfaces, numerical solutions by means of digital computers.
Professor Japp

303-685B DRAINAGE ENGINEERING. Hydraulics of wells, pumping tests, theories of flow into auger holes and drain tubes, seepage from canals and ditches, seepage control in earth structures, soil stabilization by drainage, relief wells, sand drains, foundation drainage and construction de-watering. Surface drainage problems and unsaturated flow.
Professor Japp

303-686A EARTHWORK ENGINEERING. Design and construction of earth and rock fills, stability, improvement of stability with berms, etc.; techniques of fill placement over soft ground, induced pore pressures during fill placement. Stability of cuts in soil and rock, techniques of analysis, influence of pore pressures on stability. Interaction between embankments and adjoining structures, such as abutments. Case records of embankment performance and failures.
Professor Osler

303-687B PAVEMENT DESIGN. Types and properties of bituminous materials, laboratory testing; design of bituminous concrete mixes, construction control. Analysis of rigid and flexible pavement systems using elastic and viscoelastic theory. Design of airfield and highway pavements. Moisture content changes beneath pavements, frost action and frost susceptibility of soils, soil stabilization. Pavement evaluation and strengthtening.
Professor Osler

303-688A SOIL DYNAMICS. Basic system dynamics, wave propagation in solids, wave propagation in soils, constitutive relations, dynamic equilibrium and stability, yielding, strain-rate effects, behaviour of soils subjected to cyclic and impulsive loadings.
Professor Japp

303-689B DYNAMICS OF FOUNDATIONS AND EARTH STRUCTURES. Design of foundations subjected to vibratory and impulsive loadings, evaluation of dynamic soil properties, lumped

mass analogies, earthquake effects in slope stability and earth-work structures.
Professor Japp

303-690D RESEARCH PROJECT. This project relates to the M.Eng. degree, Option B.

303-724B ADVANCED TOPICS IN CONCRETE STRUCTURES. Seminar approach to current research topics in the field of concrete structures.

303-771B SPECIAL TOPICS IN FLUID MECHANICS. After the development of the general equations of motion, emphasis will be placed on various mathematical methods applied to problems in fluid mechanics. Similarity methods; singular perturbation analysis; method of characteristics; integral methods. Examples will be chosen from various fields.
Professor Savage

303-791A PHYSICS AND CHEMISTRY OF SOILS I. Crystallographic structure of soil particles, clay-water electrolyse systems, X-Ray and D.T.A. studies, concepts of soil water, potentials in soil-water systems.
Professor Yong

303-792A MECHANICS OF PARTICULATE MEDIA. (Prerequisite 303-667B). Properties of particulate media, contact theory, equilibrium and compatibility, elastic-plastic problems, single phase and two phase systems. Yield criteria, critical state analyses, micro and macro analysis, stress distribution, arching effects, bulk flow problems.
Professor Yong

303-793B PHYSICS AND CHEMISTRY OF SOILS II. (Prerequisite: 303-791A). Thermodynamics of clay-water interaction, soil freezing, ion and base exchange, clay-water interaction and environmental effects in relation to engineering properties.
Professor Yong

303-794A SPECIAL TOPICS IN SOIL MECHANICS. Special problems in research, theory, application and design related to Soil Mechanics.
Professor Yong

E6 SCHOOL OF COMPUTER SCIENCE

STAFF

Professors — G. MARSAGLIA *(Director);* W.D. THORPE
Associate Professors — T.H. MERRETT; M.N. NEWBORN; C.C. PAIGE; G.F.G. RATZER
Assistant Professors — K. ANANTHANARAYANAN; D.J. BURRAGE; N. HORSPOOL; S. LAM; N. MAROVAC; R.A. RECKHOW; G.T. TOUSSAINT
Lecturers — M. COHEN; R. GOVINDARAJAN; A. GREENBERG

The School of Computer Science provides instruction and research at the graduate level in theory and applications of computer science. Its programs are based on close cooperation with computer science activities in other departments of the University. It offers programs leading to the degrees M.Sc., M.Sc. (Applied) and Ph.D. in Computer Science, with courses predominantly from those outlined below, augmented by courses in other departments, and with research activities directed either by the staff of the School or members of associated Faculties for candidates interested in particular computer applications.

ADMISSION

Candidates with a good background in mathematics and experience in computer programming may be admitted. Candidates who have inadequate backgrounds may be admitted but will be required to take additional qualifying courses. Each candidate's program will be planned individually, taking into account his or her background and interests. The student's adviser will be responsible for providing a balanced program, subject to review by the staff of the School.

Two programs are offered, leading respectively to the degrees of M.Sc. and M.Sc. (Applied).

REQUIREMENTS

M.Sc. Degree

Normal requirements are a thesis and six half-year courses. Courses will be chosen with guidance by the candidates' adviser, subject to approval by the staff of the School.

M.Sc. (Applied) Degree

This is a two-year program, normal requirements for which are nine half-year courses and three computer applications projects. The projects are to be supervised by different faculty members. Candidates may obtain approval of the staff of the School to combine two or all three projects into an enlarged project. Courses will be chosen with guidance by the candidates' adviser subject to approval by the staff of the School.

The application deadline for all programs is 1 April.

COURSES FOR HIGHER DEGREES

308-520A DATABASE SYSTEMS (3 hours). An introduction to abstract data structure and to techniques of database implementation. Topics: review of sentential and predicate logic, relational view of data, relational calculus, relational algebra, normalization; hierarchial and network views of data, implementation techniques, existing database systems (chosen from: ADABAS, DBTG, IMS, S2000, TOTAL); data security and integrity.
Professor Merrett

308-573A,B MINI-COMPUTERS (3 hours). Characteristics of mini computers; their internal structure. Assembler and machine language programming with emphasis on PDP11. Assemblers, loaders and simulators for several machines. Manufactures' supplied software including operating system. Mini computer applications. Students will be assigned "hands-on" projects.
Professors Marovac and Ratzer

308-610A INFORMATION STRUCTURES. (3 hours). Theory and practice of storing and manipulating numerical and non-numerical data. Records, files, lists, strings, stacks, trees, graphs. Accessing and storage, sorting and searching. Combinatorial studies of complexity and efficiency of algorithms for data manipulation.
Professor Newborn

308-611B DATA STRUCTURE AND LIST PROCESSING TECHNIQUES. (3 hours). This half-course is intended for those who wish to study computer programming techniques intensively. Topics involve discussion and comparison of programming techniques for creation, deletion and manipulation of different types of lists and tree structures. Their application to symbol manipulation.
Professor Newborn

308-614A COMPUTER METHODS IN SYSTEMS ANALYSIS I. (3 hours). This half-course is intended for those who wish to develop an analytical approach to economic, commercial and industrial problems which involve complex systems of highly interactive components. The emphasis on computer simulation will be complemented by discussion of the underlying theory. Topics: discrete simulation — queuing theory, inventory theory, applications to operating systems, continuous simulation. Special languages and application packages: GPSS, GASPII., CSMP.
Professor Merrett

308-615B COMPUTER METHODS IN SYSTEMS ANALYSIS II. (3 hours). This half-course is concerned with the structure, organisation and retrieval of information with emphasis on computer and data base techniques. Applications to commercial problems and library science are discussed. Topics: Dictionaries. Logical, statistical and syntactical analysis of information. Retrieval. File organisation. Data base retrieval systems. Evaluation of computer methods. Applications.
Professor Merrett

308-620A PROGRAMMING LANGUAGES AND COMPILERS. (3 hours). The structure of programming languages. Syntax and semantics of algorithmic languages. List processing, string manipulating and simulation languages. Compilers, interpreters, translators and processors.
Professor Reckhow

308-621B THEORETICAL ASPECTS OF COMPILER CONSTRUCTION. (3 hours). Context-free grammars and formal definition of programming languages. Top-down and bottom-up syntactical analysis. Precedence analysis, LR(K) grammars and other special classes allowing effective analysis. Syntax directed transductions and push-down assemblers. Other parsing machines. Generalized stack techniques.
Professor Reckhow

308-624A HIGH-LEVEL COMPUTER LANGUAGES I. (3 hours). Comparative studies and advanced concepts in high-level computer languages, selected from ALGOL 60, APL PL/1, COBOL, SNOBOL and others.
Professor Marovac

308-625B HIGH-LEVEL COMPUTER LANGUAGES II. (3 hours). An intensive study of recent developments in high-level language construction and development with particular emphasis on new concepts and implementation.
Professor Marovac

308-630A FORMAL LANGUAGES AND AUTOMATA THEORY. (3 hours). Languages, phrase structure grammars. The Chomsky hierachy: regular, context-free, context-sensitive and type O languages and their corresponding recognition devices. Reductions on grammars; normal forms; operations on languages; closure properties and decidability results. Applications to programming languages.
Professor Reckhow

308-631B THEORY OF ALGORITHMS AND COMPUTATIONAL COMPLEXITY. (3 hours). Algorithms of Markov. The universal algorithm. Turing machines. Computability: recursive functions and Church's thesis. Post correspondence problem and other undecidable problems. Computational complexity; machine-based complexity; time and space requirements for various computations. Random access machines and other models for digital computers. Efficiency of algorithms.
Professor Reckhow

308-640A NUMERICAL ALGORITHMS I. (3 hours). Computers are unable to represent all real numbers exactly, and as a result many computed answers differ drastically from their true mathematical results. This course explains how this can occur, and how we can avoid such disasters. Many of the important algorithms in computational linear algebra will be covered, including those for solution of equations, least squares, eigenvalues, singular values, generalized inverses, and linear programming. The emphasis will be on numerical stability of algorithms and efficient usage of the computer.
Professor Paige

308-641B NUMERICAL ALGORITHMS II. (3 hours). The study and use of computational algorithms for solving mathematical problems. Topics:

non-linear algebraic equations in one and in several variables; approximation using polynomials, splines, and fourier series; fast transforms; ordinary and partial differential equations. Important computational properties such as numerical stability of algorithms and economy of computer time and storage will be considered. Required background includes a previous numerical course and FORTRAN programming.
Professor Burrage

308-644A PATTERN RECOGNITION I. (3 hours). Feature extraction methods in organisms and machines. Preprocessing techniques. Trainable pattern classifiers. Discriminant functions and their implementation via parametric and non-parametric training. Threshold logic units and perceptrons. The statistical approach to pattern recognition. Sequential classification. The approximation of probability distributions in classifier structure design. Estimation of density functions. Experimental methodology and applications.
Professor Toussaint

308-645B PATTERN RECOGNITION II. (Prerequisite 308-644A). Design and analysis of pattern recognition experiments. Estimation of misclassification. Nonparametric techniques in classification and density estimation. Sequential classification. Automatic feature evaluation and selection. Unsupervised learning and clustering. Compound decision theory and the use of context. Applications.
Professor Toussaint

308-650A COMBINATORIAL ALGORITHMS I. (3 hours). Network Flows: Maximal flows, solution by the labelling method, capacitated nodes, flows in undirected or mixed networks. Relation to linear programming. Shortest paths and minimal cost algorithms, with application to the transportation problems, the optimal assignment problem, the warehousing problem. Multiterminal networks. Equivalent networks. Computer solution of large problems.
Staff

308-651B COMBINATORIAL ALGORITHMS II. (3 hours). Topics in constructive graph theory including various algorithms for determining isomorphism, planarity and connectivity of graphs, finding longest paths; generation procedures for various classes of graphs. This course is a continuation of 308-650A.
Staff

308-660A NUMERICAL METHODS IN OPTIMIZATION I. (3 hours). The use of computers in solving unconstrained and constrained optimization problems. Direct search, gradient, quasi-Newton, and penalty function techniques. Methods which treat the constraints directly, as for example in linear programming. A numerical approach will be taken and students will program and develop algorithms for solving large problems on the computer. Required background includes computational linear algebra, FORTRAN, and hopefully, ALGOL.
Professor Paige

308-661B NUMERICAL METHODS IN OPTIMIZATION II. (3 hours; prerequisite: 308-660A). The use of computers in solving large or complex optimization problems. Emphasis on recently developed techniques in optimization. Extension of gradient methods to constrained problems. New fast and numerically stable algorithms for linear programming. Lagrange parameter techniques. Students will program techniques for different optimization problems, and compare them for accuracy, efficiency, and general usefulness.
Professor Paige

308-666A COMPUTER METHODS IN OPERATIONS RESEARCH I. (3 hours). Use of the computer in problems arising in operations research. Resource allocation, inventory and production control. Applications of linear programming and its extensions.
Staff

308-667B COMPUTER METHODS IN OPERATIONS RESEARCH II. (3 hours; prerequisite: 308-666A). Critical path planning and scheduling. Simulation. Applications of queuing theory. Monte Carlo theory, graph theory. Network flows. Applied dynamic programming.
Staff

308-671B COMPUTER SYSTEMS AND ORGANIZATION. (3 hours). Control and scheduling of large information processing systems. Operating system software — resource allocation, dispatching, processors, access methods, job control language, main storage management. Batch processing, multiprogramming, multiprocessing, time sharing. Single and multiple virtual memory operating systems.
Staff

308-690A COMPUTER METHODS IN PROBABILITY AND STATISTICS I. (3 hours). The use of random numbers in distribution theory, goodness of fit, power and robustness of tests, geometric probability. Algorithms and programs for analysis of data.
Professor Marsaglia

308-691B COMPUTER METHODS IN PROBABILITY AND STATISTICS II. (3 hours; prerequisite 308-690A). A continuation of 690A. Algorithms and programs for statistical analysis, particularly multivariate analysis, time series and the estimation of distribution and density functions.
Professor Marsaglia

308-698A MONTE CARLO AND SIMULATION I. (3 hours). Random numbers and how to get them, decide if they are any good and what to do with them.
Professor Marsaglia

308-699B MONTE CARLO AND SIMULATION II. (3 hours; prerequisite: 308-698A). A continuation of 698A. Applications of Monte Carlo (computer programs that use random numbers) to simulation problems, statistics, probability and operations research.
Professor Marsaglia

308-730D THE COMPUTER IN MATHEMATICAL RESEARCH. (3 hours). Examples of computer aided research in pure mathematics; number theory, combinatorial theory, finite geometries and configurations, group theory, graph theory, probability and mathematical statistics. Conversely, recent trends in pure mathematics arising from developments in computer science.
Professor McKay

308-760A ADVANCED TOPICS: THEORY I.

308-761B ADVANCED TOPICS: THEORY II.

308-762A ADVANCED TOPICS: PROGRAMMING I.

308-763B ADVANCED TOPICS: PROGRAMMING II.

308-764A ADVANCED TOPICS: SYSTEMS I.

308-765B ADVANCED TOPICS: SYSTEMS II.

308-766A ADVANCED TOPICS: APPLICATIONS I.

308-767B ADVANCED TOPICS: APPLICATIONS II.

E7 CRYSTALLOGRAPHY

Students wishing to undertake graduate studies in Crystallography should submit their application to G. Donnay, Professor of Crystallography. Applications will be assessed by an interdisciplinary committee, appointed for the purpose, and if the application is accepted an appropriate program of study and research will be arranged.

GRADUATE COURSES

186-502B CRYSTAL -STRUCTURE ANALYSIS. (2 lectures). Elements of cyrstallography and diffraction physics basic to structure determination. Choice of crystal; principles underlying photographic and counter methods of collecting intensity data. Data reduction. F^2 synthesis. The phase problem. Trial and error methods, heavy-atom techniques, direct methods. Electron-density calculation. Refinement of structure.
Professor Donnay

186-503D CRYSTAL-STRUCTURE DETERMINATION. (6 hours laboratory; Prerequisite 186-211A, or 502B). Techniques of structure determination applied to a research problem.
Professor Donnay

186-504B CRYSTAL SYMMETRY. (2 lectures). Derivation of the 32 crystallographic point groups (the geometric crystal classes), 14 translation groups (the Bravais lattices), 73 arithmetic crystal classes (isomorphic with symmorphic space groups) and 230 space groups. Atomic site symmetry vs crystal-structure symmetry. Effect of solid solutions on crystal symmetry. Symmetry information to be gained from X-ray diffraction: powder diagrams vs single-crystal patterns. Generalized symmetry applied to twinning and magnetic structures.
Professor Donnay

E8 DEPARTMENT OF ELECTRICAL ENGINEERING

76/77

STAFF

Professors — E.L. ADLER; P.R. BÉLANGER; M.L. BLOSTEIN; R.P. COMSA; G.L. d'OMBRAIN; G.W. FARNELL; T.J.F. PAVLASEK; P. SILVESTER *(Chairman)*; G. ZAMES

Associate Professors — C.H. CHAMPNESS; C. FENGLER; M.J. FERGUSON; M. FUKADA; A.A. GUNDJIAN; M.D. LEVINE; A.S. MALOWANY; B.T. OOI; N. RUMIN; E. SIGURDSON; F. SPITZER; G.L. YIP

Assistant Professors — P. KABAL; R. KWONG, H.C. LEE

Lecturer— K.L. FRASER

Sessional, Special and Part-Time Staff — C.W. BRADLEY; D. CREVIER; P.J. FENWICK; B. GEVAY; B.A. HOWARTH; M. KAPLAN; G. KARADY; K.J. KOISTE; M.A. MARIN; S. RAUCH; F.M. REZA; P.K. SEN; L. SNIDER; A. TURGEON

The department is excellently equipped for research and has special interests in the following areas; control engineering, communications, computers, microwave optics, solid state electronics, dynamics of machines and power modulators, high voltage phenomena, network theory, acoustics and surge voltage phenomena. Departmental computing facilities include a PDP-8 interfaced with a PDP-15/40 which are used to study real time computing, graphics, speech, and automatic classification of medical data. The facilities are in addition to the 360/75 and the 370/155 computers operated by the university.

Facilities for study in the microwave area include two anechoic chambers with automatic field intensity and phase plotters. Vacuum deposition and r-f sputtering apparatus are used for the fabrication of solid state devices, as are electromagnets for measurements of the electrical and magnetic properties of solids. Cryogenic facilities are also available. There is a fully equipped laboratory for the study of

electric machine dynamics, and also laboratory facilities for high-voltage phenomena.

ADMISSION AND REQUIREMENTS

M. Eng Degree

Candidates who fulfil the general requirements of the Faculty of Graduate Studies and Research and who possess an appropriate first degree may be accepted for a course of study leading to the M.Eng. degree. A student may satisfy the requirements for the degree by completing one of the following options:

Option A: A minimum of six appropriate graduate courses, at least four of which are in Electrical Engineering, plus a research project leading to a Master's thesis.

Option B: A minimum of nine appropriate graduate courses, at least six of which are in Electrical Engineering, plus a research or design project leading to an internally-examined report.

Ph.D. Degree

Candidates who fulfil the general requirements of the Faculty of Graduate Studiesand Research and who possess a Master's degree may be accepted for a course of study leading to the Ph.D. degree in Electrical Engineering. The minimum time taken to complete the requirements is two years. In exceptional circumstances a candidate may be accepted for the Ph.D. degree who does not possess a Master's degree but he will be registered first as a Master's candidate.

COURSES FOR HIGHER DEGREES

Not all of these courses are given every year.

304-501A FREQUENCY DESIGN OF LINEAR CONTROL SYSTEMS. 3(3-0-6). (Prerequisite: 304-303A,B or 304-308B). Frequency response design of linear control systems. Compensators, error constants. Sensitivity, two-degree-of-freedom design. Cascade and other multiloop designs. Feed-forward. Frequency response design of multivariable linear control systems. Decoupling. Discrete systems, sequences, convolution, difference equations. The z-transform. Sampled-data systems and their design by frequency-domain techniques.

304-502B STATE SPACE METHODS IN LINEAR SYSTEMS. 3(3-0-6). (Prerequisites: 304-501A). State representation of linear systems. The state transition matrix. System modes and Jordan forms. Controllability and observability. Transfer functions and minimal representations. State representation of discrete and sampled-data systems. Canonical forms. Modal control and pole placement by state feedback. Quadratic performance index, the Lyapunov matrix equation. Stability and Lyapunov functions. The optimal regulator problem. Dead-beat controllers. Disturbance compensation, feedforward. Linear state observers. Optimization of output-feedback controllers for min-max eigenvalue placement or minimization of a quadratic performance index.

304-512B DIGITAL SIGNAL PROCESSING. 3(3-0-6). (Prerequisite: 304-303A,B or 304-308B). Discrete-time linear systems theory, digital filter synthesis techniques, quantization effects in digital filters, discrete Fourier transforms including FFT algorithms, high-speed convolution and correlation techniques.

304-521A DIGITAL COMMUNICATION. 3(3-0-6). (Prerequisites: 304-305B or 189-384B, 304-303A,B or 304-308B). Introduction to digital transmission, digital data and performance criteria, discussion of digital transmission facilities; basic definitions; coding and framing formats; baseband pulse modulation, pulse amplitude and pulse frequency modulation, phase shift keying; signal spectra; demodulation techniques noting problems of framing and synchronization; performance on Gaussian channel, bandlimited channel characterization, pulse dispersion, adaptive and non-adaptive equalization, Gaussian and impulsive-noise, pulse jitter, repeaters and analysis; introduction to error control, parity checking, error detection, automatic repeat request performance estimates.

304-552B STATISTICAL COMMUNICATION THEORY. 3(3-0-6). (Prerequisites: 304-305B or 189-384B, 304-303A,B or 304-308B). Optimum receiver principles; vector channels and decision regions, matched filters, error evaluation for various signal sets; channel capacity, important channel models, non-white Gaussian noise, bandpass channels, random amplitude and phase, linear (amplitude, single side-band double side-band) modulation, twisted modulation, frequency modulation, phase modulation, bandwidth and weak noise suppression, phase-lock loop.

304-529A IMAGE PROCESSING AND COMMUNICATIONS. 3(3-0-6). (Prerequisites: 304-021A,B 304-303A,B or 304-308B). Psychophysics of vision, properties of images; sampling, digitizing, and displaying images; geometric and algebraic processing, spatial filtering, image coding and transmission; binary image analysis, segmentation, descriptions of lines and shapes; representation, linguistic methods, software and hardware systems, applications; scene analysis.

304-531B REAL-TIME SYSTEMS. 3(3-3-3). (Prerequisite: 304-222A,B or 304-324A). Real-time engineering applications of computers to on-line control communication systems and data acquisition. This course is concerned with aspects of hardware, software, the hardware-software interface and their integration into a completed system. The

course required the completion of individual or group projects using one of the department's mini- or micro-computers.

* **304-532A COMPUTER GRAPHICS. 3(3-3-3).** (Prerequisite: 304-324A). Introduction to computer graphics systems and display devices: core or disc refreshed, storage tube, scan conversion systems; graphical input and interactive graphical techniques — light pen, joystick, Rand tablet; display files: graphics languages and data structures; 2D transformations; 3D computer graphics, hidden line removal and shading; graphics system design; applications. The course will consist of lecture material as well as a laboratory project involving the preparation and running of graphics programs on the PDP-15 and IBM 360 systems. (Alternate years, next given 77/78).

304-533B COMPUTERIZED TEXT PROCESSING. 3(3-0-6). (Prerequisite: 304-324A). Data editing by batch and online entry; manipulation of text and data. Concepts of type design and typography. Typesetting practice and technology. Production technique in printing industry as applied to letter, book and journal publication. Applications of numerical control techniques and computerized decision making to printing, particularly typesetting. (Alternate years, next given 76/77).

304-543B NUMERICAL METHODS IN ELECTROMAGNETICS. 3(3-0-6). (Prerequisite: 304-251A,B or 304-256A). Mathematical representation of fields. Discrete approximations for continuous differential and integral operators. Methods for solving deterministic and eigenvalue problems by direct and iterative means.

* **304-561A ELECTRIC MACHINE DESIGN. 3(3-0-6).** (Prerequisite: 304-261A,B). The output equations of electromagnetic apparatus. Specific electric and magnetic loading. Magnetic circuits. Time constants and power gain. Windings including pole amplitude modulation. Leakage inductances. Commutation interpoles and compensation. Per unit values (Alternate years, next given 77/78).

304-562A CONTINUUM ELECTROMECHANICS. 3(3-0-6). (Prerequisite: 304-251A, B or 304-256A). Quasi-static electromagnetic field equations. Field transformation in moving co-ordinate systems. Boundary conditions and constitutive relations for moving media. Magnetic diffusion and charge relaxation in moving media. Maxwell's stress tensor for the evaluation of force densities. Electromechanics of elastic solids and Newtonian fluids. Application of theories to magneto-hydrodynamics, electro-hydrodynamics, magnetic pumps, linear induction motor and magnetic levitation. (Alternate years, next given 76/77).

* **304-564B CONTROL RECTIFIER CIRCUITS. 3(3-0-6).** (Prerequisite: 304-333A,B or 304-338B). Simple polyphase rectifiers. Thristor characteristics. Fully and semi-controlled bridges. Interphase transformers. Commutation, regulation and equivalent circuits. Harmonic content. Active loads. Cycloconverters. (Alternate years, next given 77/78).

304-565B INVERTERS AND COPPER CIRCUITS. 3(3-0-6). (Prerequisite: 304-333A,B or 304-338B). Properties of circuits employing the forced commutation of thyristors to perform a switching function. Static and dynamic properties of thyristors and diodes. Constant voltage and constant current inverters, three phase inverters. Choppers. Motor loads. (Alternate years, next given 76/77).

304-572A LASER ELECTRONICS. 3(3-0-6). Prerequisites: 198-271B, 304-332B or 304-337B). Review of quantum mechanical and statistical mechanical concepts and techniques. Principle of amplification by stimulated emission of radiation; analysis of resonant cavity and travelling wave maser amplifiers; coherence, stability and noise; characteristics of gaseous, solid state and semiconductor junction lasers. Nonlinear effects for modulation and detection of laser beams; applications to communication, measurements, signal processing and other fields as time permits.

304-573B MICROWAVE DEVICES AND CIRCUITS. 3(3-0-6). (Prerequisites: 304-592A, 304-332B or 304-337B). Gunn diodes. LSA mode operation; Gun oscillators. Tunnel diodes, IMPATT and TRAPATT oscillators. Parasitics in tunnel diode circuits; noise, microwave transistors: models; scattering parameter design of distributed amplifiers. High frequency diodes: limitations in sensitivity, noise figure and dynamic range. Varactor multipliers. Parametric amplifiers: noise in uncooled amplifiers; use of circulators in parametric amplifiers. (Alternate years, next given 76/77).

304-575B OPTICAL AND MAGNETIC PROPERTIES OF SOLIDS. 3(3-0-6). (Prerequisites: 304-352B or 304-357B, 304-332B). Classical and quantum theories of polarization. Band theory of solids. Dispersion relations. Tensor description of anisotropic materials. The ray ellipsoid. Double refractions, birefringence dichroism, piezoelectricity, ferroelectricity. Classical and quantum theories of magnetization. Diamagnetism, paramagnetism, ferro- and ferri-magnetism. Magnetic domains. Ferrites and Garnets. Non-reciprocal microwave devices and magneto-optic devices which exploit crystal anisotropy. (Alternate years, next given 76/77).

304-579A SEMICONDUCTOR DEVICES AND MODELS. 3(3-0-6). (Prerequisite: 304-333A,B or 304-338B). Systematic methods for obtaining useful models which relate device physics to terminal behaviour. The pn junction diode, junction-gate and MOS field-effect transistors, bipolar transistor: idealized devices, practical device geometries, applications. The transistor switch. Determination of model parameters by measurement. (Alternate years, next given 76/77).

304-592A MICROWAVE THEORY AND TECHNIQUES. 3(3-0-6). (Prerequisite: 304-352B or 304-357B). Transmission lines and waveguides, surface waveguides, microwave circuit theory, impedance matching and transformation, passive microwave devices, resonators, periodic structures and filters, microwave antennas.

304-593B ANTENNAS AND PROPAGATION. 3(3-0-6). (Prerequisite: 304-352B or 304-357B). Near and far field behaviour or radiators; antennas as a boundary value problem; practical antenna parameters; wire antennas, antenna arrays, aperture methods of antenna analysis; measurement of input impedance, field patterns, gain and noise; point-to-point propagation, fading beyond horizon and long distance propagation, ionospheric, atmospheric and earth's surface considerations; tropospheric scatter.

* **304-596B COHERENT WAVE OPTICS. 3(3-0-6).** (Prerequisite: 304-352B or 304-357B). Introduction to wave optics. Diffraction theory and geometrical optics including the Kirchoff-Huygens diffraction integral, Fermat's principle and Hamiltonian Formulations of Ray Optics. Lenses and lens waveguides. Optical Fourier transform and spatial filtering. Gaussian beams. Holography. Propagation characteristics of optical fibres and dielectric waveguides. Thin film (or slab) optical waveguides. Discussion of optical communication systems. (Alternate years, next given 77/78).

304-602A OPTIMAL CONTROL THEORY. 4(3-0-9). (Prerequisite: 304-404A or 304-502B). Basic concepts of static optimization. Variational solutions for discrete — and continuous-time control problems. Pontryagin's maximum principle. Dynamic programming. Computational algorithms. Singular control problems. The linear regulator problem.

304-603B ESTIMATION AND STOCHASTIC CONTROL. 4(3-0-9). Prerequisites: 304-612A, 304-502B). Properties of estimators; linear regressing. The innovations process. Innovations approach to optimal linear filtering for continuous-time and discrete-time processes. Smoothing and prediction. Properties of the Kalman filter. Optimal stochastic control of linear systems with direct state measurements. The certainty equivalence principle. Minimum-variance control. Estimation and control of discrete linear systems described by ARMA models. Stochastic control of nonlinear systems.

304-604A PARAMETER IDENTIFICATION AND ADAPTIVE CONTROL. 4(3-0-9). (Prerequisite: 304-603B). Least-squares, maximum likelihood and Bayesian estimates. Hypothesis testing. Identification of discrete systems described by ARMA models using least-squares, generalized least-squares and maximum likelihood. Instrumental variable methods. Stochastic approximation. Use of the extended Kalman filter. Bayesian estimation of systems taken from a finite population. Estimation of noise covariances. Adaptive control of discrete systems using one-step-ahead control laws, enforced separation and open-loop-feedback optimal control (OLFO) laws. Use of specially-designed inputs. (Alternate years, next given 76/77).

304-612A RANDOM PROCESSES. 4(3-0-9). (Prerequisite: 304-305B or 189-384B). Markov processes, Markov chains, correlation functions and spectra, renewal processes, queues, queuing networks.

* **304-613B COMPUTER-AIDED NETWORK ANALYSIS AND DESIGN. 4(3-0-9).** (Prerequisite: 304-303A,B or 304-308B). Computer-aided techniques for the DC, transient and frequency-domain analysis of linear and nonlinear electronic networks; methods of sensitivity analysis; elementary concepts in optimization theory; application of optimization techniques to circuit design. (Alternate years, next given 77/78).

304-614A NETWORK SYNTHESIS. 4(3-0-9). (Prerequisite: 304-303A,B or 304-308B). Properties of positive real functions; determination of system functions; synthesis of driving-point functions; syntheses of lossless two-port and RC two-ports; approximation problems; synthesis of active networks. (Alternate years, next given 76/77).

* **304-620B INFORMATION THEORY AND CODING. 4(3-0-9).** (Prerequisite: 304-305B or 189-384B). Measure of information, limitations of measure, characterization of noisy channels, channel coding and capacity. Estimates for some real channels, source coding revisited (rate distortion), error coding techniques — real and imaginary, feedback and automatic repeat request channels. This course is intended to give the student an insight into the concepts and limitations of Information Theory along with a survey of current practice in error-correcting coding. (Alternate years, next given 77/78).

* **304-622B ADVANCED COMMUNICATIONS SYSTEMS ANALYSIS. 4(3-0-9).** (Prerequisite: 304-522B). This course will allow the student to study the foundations required for modelling advanced communication systems. Analysis of specific classes of systems such as telephone, satellite, troposcatter, microwave for both analog and digital data. (Alternate years, next given 77/78).

* **304-625B ARTIFICIAL INTELLIGENCE. 4(3-0-9).** Prerequisite: 304-529A). Definition, models for an artificial intelligence, data structures, heuristic programming, learning, pattern recognition, man-machine interaction, practical applications and study of selected research topics. (Alternate years, next given 77/78).

304-628B COMPUTER COMMUNICATIONS NETWORKS. 4(3-0-9). (Prerequisites: 304-324A, 304-521A or 304-411A). Classification of networks, voices, data, line-switching, message switching, packets; characterization of information sources;

computer interface, terminal interface, network interface, queuing models, queuing networks, capacity versus delay; network system components, multiplexers, concentrators; topological design problems and algorithms; network control and characterization; tree networks, reliability; non-tree network designs. (Alternate years, next given 76/77).

304-636B REAL-TIME OPERATING SYSTEM DESIGN. 4(3-0-9). (Prerequisite: 304-531A). This course is intended for students interested in real-time applications of small computers. The course includes a study of three existing real-time operating systems as well as a design project. The course content includes the following: Task scheduling mechanisms, I/O organization, bulk storage organization, incorporation of service routines. Inter-computer communication, task co-ordination, multiple computer operating systems. (Alternate years, next given 76/77).

* **304-637B COMPUTER SYSTEMS ANALYSIS. 4(3-0-9).** (Prerequisite: 304-531A). Computer system specification, hardware-software trade-offs, selection of hardware components, problem solutions using interconnected computers, choice of programming languages, structured programming, technical organization and management. The course includes three case studies and a design project. (Alternate years, next given 77/78).

304-638A ADVANCED COMPUTER DESIGN. 4(3-0-9). (Prerequisite: 304-531A). This course is intended for graduate students with a good knowledge of computer organization, structure and architecture and some knowledge of microprogramming. Topics in hardware technology include functional logic building blocks, arithmetic and non-arithmetic processors, memory utilization and storage management, sequencing subsystems, transmission and exchange. Determination of expected performance by simulation; computer-aided design. Specific examples of solutions to computer design problems. Selected topics on novel computer organizations such as array, cellular and variable-structure computers. (Alternate years, next given 76/77).

304-641A APPLIED ELECTROMAGNETIC THEORY. 4(3-0-9). (Prerequisite: 304-592A or 304-593B). Mathematical techniques, analytical and numerical, for solving E. M. boundary value problems. Maxwell's equations, wave dispersion waves in gyrotropic media, Huygen's principle; Green's functions and integral equations, angular spectrum of plane waves, cylindrical and spherical wave functions, perturbational and variational techniques. Waveguide, antenna, scattering and diffraction problems.

* **304-647A FINITE ELEMENTS IN ELECTROMAGNETICS. 4(3-0-9).** (Prerequisite: 304-543B). Finite elements for the Helmholtz equation in the plane and in space. Elements for axisymmetric problems. Isoparametric and curvilinear elements; elements for nonlinear problems. Integral equations and the solution of antenna problems. Finite elements in parabolic problems. (Alternate years, next given 77/78).

* **304-662A ELECTRIC MACHINE DYNAMICS. 4(3-0-9).** (Prerequisites: 304-261A,B, 304-502B). Review of electric machine models. State-space formulation of nonlinear differential equations. Solutions through numerical inegration, constant speed linearization. Models of control elements, loads, prime-movers, voltage regulators, transmission networks. State equations of integrated power system. Modal analysis of multimachine power system. Operating point stability. Transient stability analysis. Electromechanical resonance. (Alternate years, next given 77/78).

304-663X HVAC POWER TRANSMISSION. 4(3-0-9). Design considerations of EHV and UHV power transmission systems: audible noise, radio interference, environmental aspects of transmission lines. Coordination of system overvoltages with external and internal insulation strengths leading to economic insulation structures based on quantitative evaluation of reliability.

304-665X SUBSTATION APPARATUS. 4(3-0-9). Description and analysis of major apparatus used in modern power systems: circuit breakers, switches, bushings. Electrical connection of substations; principles of equipment selection based on stresses, reliability and economic requirements. Substation protection. Physical arrangement of substations.

304-664Y HVDC POWER TRANSMISSION. 4(3-0-9). Principles of HVDC power, transmission: HVDC transmission circuits, bridge convertor operation, thyristor valve developments, control of HVDC systems, protection of lines and convertor stations, harmonic filtering, modelling techniques for performance studies.

304-666Y POWER SYSTEM OPERATION. 4(3-0-9). Power system optimality criteria: economic, environmental, reliability factors. Short and long-term load forecasting; simulation of river flows; economic operations of hydroelectric thermal and hydro-steam systems. Planning of additional equipment by the global and marginal approaches. Siting of new plants. Planning of interconnections; maintenance scheduling.

304-667Y MODERN TECHNIQUES FOR POWER SYSTEM ANALYSIS. 4(3-0-9). Mathematical descriptions of power systems suitable for computer analysis, and solutions algorithms. Topics will include: matrix algebra, incidence and network matrices, sparse matrix techniques, phase and component representation, short circuit studies, Diakoptics, load flow studies, transient and dynamic stability studies, contingency analysis, state estimation, system identification.

304-677A,B EXPERIMENTAL TECHNIQUES IN SOLID STATE. 4(0-6-6). (Prerequisite: 304-332B or 304-337B). Experimental laboratory project in solid state involving the following: techniques of laboratory preparation, fabrication and orientation of solid state samples and structures for experimental study; use of special laboratory research apparatus; measurement of electronic, optical and structural properties of samples and structures; evaluation and analysis of electronic behaviour and performance; interpretation of relevant physical processes and phenomena.

304-678A SPECIAL TOPICS IN SOLIDS I. 4(3-0-9). (Prerequisite: 304-332B or 304-337B). Discussion of topics in semiconductor electronics and electronic properties of materials in areas of current research to the department.

304-679B SPECIAL TOPICS SOLIDS II. 4(3-0-9). (Prerequisite: 304-332B or 304-337B). Dielectric properties and molecular structure of solids and liquids. Dielectric theory and applications.

304-681A,B COLLOQUIUM IN ELECTRICAL ENGINEERING. 4 credits. Directed reading, seminar and discussion course in various subjects of current interest in electrical engineering research.

* **304-685B HIGH VOLTAGE ENGINEERING. 4(3-0-9).** (Prerequisite: 304-251A,B or 304-256A). Electrical discharges in gases; uniform and non-uniform fields; corona discharges; the spark mechanism. Generation and measurement of high direct, alternating and impulse voltages. (Alternate years, next given 77/78).

304-688A,B 304-689A,B RECENT ADVANCES IN ELECTRICAL ENGINEERING. 4 (3-0-9). Course content suited to the area of specialization of the lecturer.

304-699A,B RESEARCH PROJECT.

E9 DEPARTMENT OF GEOGRAPHY

STAFF

Professors — J.B. BIRD; B.J. GARNIER *(Chairman)*; T.L. HILLS; J.T. PARRY

Associate Professors — W. ARMSTRONG; M.A. CARSON; R.N. DRUMMOND *(on leave 1976)*; P.G. HOLLAND; J. LUNDGREN; B.H. MASSAM (on leave 1976); S. OLSON; E. WADDELL; R.C. ZIMMERMANN *(on leave 1976-77)*

Assistant Professors — J.J. DRAKE; G.O. EWING *(on leave 1976-77)*; W.B. KEMP; J.E. LEWIS; T. MOORE; F.H. NICHOLSON *(Director, Subarctic Research Laboratory, Schefferville, Que.)*

Honorary Staff — F. MULLER

ADMISSION

M.A. and M.Sc. Degrees

Attention is directed to the Faculty of Graduate Studies admission regulations outlined in the General Information and Faculty Regulations section headed "Admission".

Applicants not satisfying these conditions but with primary undergraduate specialization in a cognate field may register for the M.A. or M.Sc. degree in Geography in certain circumstances, but in general they will be required to register for a qualifying year, as will all others who have deficiencies in their preparation but are otherwise judged to be qualified.

Ph.D. Degree

Students who have attained high standing in the Master's degree in Geography at McGill may be permitted to proceed to the Ph.D. in two further years. Rarely, a student may be allowed to register for the Ph.D. degree without having first taken the Master's degree. The normal duration of a program, including field work where required, is three years. Normally, the Department will restrict admission to the Ph.D. program to students prepared to work in one of the fields of human or physical geography in which specialized supervision is offered. These, which cover a wide range of systematic areas, are listed in documents available from the Department.

REQUIREMENTS

M.A. Degree

Candidates must:

1. pass written (and in some cases oral) examinations in at least five graduate half courses; three selected from Geography 183-602A to 608A and 610B; and two selected from *either* those named above *or* those offered elsewhere in the University.
2. attend the Graduate Colloquium, Geography 183-631D and such additional courses in Geography or cognate subjects as the Chairman and the student's director of research think fit. The additional courses may be for audit or examination;
3. submit a thesis in an appropriate area of geographical inquiry. The quality of the thesis will determine the final standing of the student.

M.Sc. Degree

Candidates must:

1. pass written (and in some cases oral) examinations in at least five graduate half courses; two selected from Geography 183-611A,B to Geography 615A,B; one selected from Geography 183-632A,B to Geography 183-635A,B; one selected from the entire list of Geography graduate courses; and one selected either from the list of Geography courses, or from the courses taught in any other department in the University.

2. attend the Graduate Colloquium, Geography 183-631D and such additional courses in Geography or cognate subjects as the Chairman and the student's director of research think fit.
3. submit a thesis in an appropriate area of geographical inquiry. The quality of the thesis will determine the final standing of the student.

Ph.D. Degree

Candidates must:

1. remedy any deficiencies in their formal training in geography and necessary cognate subjects;
2. submit themselves for a comprehensive examination (183-701D) comprising prepared papers and an oral examination. Competence in certain fields may be tested separately, but as a necessary part of this examination;
3. submit a thesis based on original research in human or physical geography;
4. attend the Graduate Colloquium. Geography 183-631D, during one of their resident years, and other courses as determined individually;
5. comply with a language requirement if this is so recommended by the student's committee.

To satisfy these requirements, the candidate may take any of the graduate or undergraduate courses offered by the Department.

COURSES AND SEMINARS FOR HIGHER DEGREES

All courses meet once each week.

183-602A URBAN GEOGRAPHY, PART I. A critical review of environmental and spatial preference and perception in an urban context, together with an introduction to appropriate measurement and scaling techniques.
Professor Olson

183-603B URBAN GEOGRAPHY, PART II. Allocation-location problems in the public and private sectors; urban model-building; urban politics.
Professor Massam

183-604A ECONOMIC GEOGRAPHY, PART I. A geographical study of the phenomenon of entrepreneurship; its logistical, organizational and locational characteristics; scale of operation; the different forms of entrepreneurship in the economic geography of different levels of economic development.
Staff

183-605B ECONOMIC GEOGRAPHY, PART II. A critical review of research on manufacturing industry, with particular emphasis on (a) the analysis of industrial agglomeration, (b) manufacturing in economically disadvantaged areas, (c) some geographical aspects of the multinational corporation, and (d) innovation and technology transfer.
Staff

183-606A GEOGRAPHY AND DEVELOPMENT, PART I. A review of the spatial problems of economic development in countries of the developing world, together with an examination of processes generating spatial inequality. Ecological considerations in economic development.
Professor Hills and Staff

183-607B GEOGRAPHY AND DEVELOPMENT, PART II. An examination of development problems in rural and urban areas of the Third World, with emphasis on agrarian structures and the social geography of urbanization. Regional emphasis will vary according to the interests of members of the seminar.
Professor Hills and Staff

183-608A CULTURAL GEOGRAPHY, PART I. A review of the aims and realizations of cultural ecology and its reference to research in the Third World, as well as a discussion of ethical questions that arise.
Professor Waddell

183-609B HUMAN GEOGRAPHY: SOCIAL AND BEHAVIOURAL PROBLEMS. A survey of the treatment of society, social institutions and the individual as units of analysis within geography. Explanation and cognitive description in human geography.

183-610B CULTURAL GEOGRAPHY, PART II. The seminar will discuss the processes by which individuals and communities adapt to their physical, social and ideological environments over time, and on the methods and techniques for measuring and analyzing these processes.
Professor Kemp

183-611A,B ADVANCED CLIMATOLOGY. An advanced study of the principles of physical climatology and their application to the spatial variations and characteristics of energy and water balances in rural and urban environments.
Professor Garnier and Staff

183-612A,B ADVANCED PHYSIOGRAPHY. An analysis of recent advances in geomorphology.
Professors Bird and Carson

183-613A,B ADVANCED BIOGEOGRAPHY. An examination of the history, methods and objectives of biogeography, with emphasis on plants.
Professors Holland and Zimmermann

183-614A, B SOILS AND WEATHERING. An examination of the major processes operating in soils; weathering reactions, pedogenetic processes, and soil nutrient relationships. The course will include laboratory work and a small project to illustrate the main techniques.
Professor Moore

183-615A,B HYDROLOGY AND WATER RESOURCES. An analysis of recent developments in hydrology, with emphasis on their applications to geographical problems. Snowmelt systems and the hydrological effects of basin development.
Professor Drake

183-622A,B HUMID TROPICAL ENVIRONMENTS. A geographical approach to the study of sample rain-forest and savanna landscapes of the humid tropics, with special attention to the human impact on the balance between forest and savanna.
Professor Hills

183-623A SEMINAR ON REGIONAL RESEARCH, PART I. Presentation of background, and discussion of research interests of varied nature, in a region of common interest to a group of graduate students and staff. Regions will vary according to interest; probable selections will include Quebec, the Gulf of St. Lawrence and the Maritimes, the Arctic and Northlands, the Caribbean, tropical Latin America.
Staff

183-624B SEMINAR ON REGIONAL RESEARCH, PART II. (See course 183-623A for description).
Staff

186-631D METHODS OF GEOGRAPHICAL RESEARCH. A review of the accepted methods of research in geographical problems, in both physical and human fields. The approach will be practical, and will require the presentation of formal research papers for criticism and discussion.
Staff

183-632A,B ADVANCED CARTOGRAPHY. A systematic examination of modern geographic-cartographic techniques for the collection, evaluation, presentation and reproduction of spatially distributed data. Practical experience in the laboratory, the photographic darkroom field work and visits to cartographic agencies are an integral part of the course.
Professor Drummond

183-633A,B REMOTE SENSING. (Not available to students registered in Geography 183-635A,B). A review of aircraft and spacecraft remote sensing systems and their applications.
Staff

183-634A,B QUANTITATIVE METHODS IN GEOGRAPHY. An examination of certain techniques in geographic research and their limitations. Emphasis is directed to the use of correlation and regression analysis, and to multivariate extensions of these techniques.
Professor Carson

183-635A,B INTERPRETATION METHODS: AIR PHOTOS AND IMAGERY. (Not available to students registered in Geography 183-633A,B). Basic photogrammetry and interpretation procedures for aircraft and spacecraft photography and imagery.
Professor Parry

McGILL SUBARCTIC RESEARCH LABORATORY

This laboratory (under the direction of Professor Nicholson) is at Knob Lake (Schefferville), in the heart of Labrador-Ungava. Facilities exist for research in most aspects of physical geography. Extensive field programs are arranged. All inquiries should be addressed to the Chairman, Geography Department.

E10 DEPARTMENT OF GEOLOGICAL SCIENCES

STAFF

Professors — *GABRIELLE DONNAY; J.A. ELSON; E.W. MOUNTJOY; V.A. SAULL; C.W. STEARN; J.S. STEVENSON*

Associate Professors — R. DOIG *(Chairman);* P.R. EAKINS; R.H. GRICE; R. HESSE; W.H. MacLEAN; R.F. MARTIN; G.R. WEBBER

Assistant Professors — D. FRANCIS; A.J. HYNES

Research Associates — A. BECKER; J.D.H. DONNAY

With the assistance of — R.N. YONG and J.C. OSLER *(Civil Engineering and Applied Mechanics);* O.G. JENSEN; B.W. MacKENZIE; W.M. TELFORD and J.E. UDD *(Mining Engineering and Applied Geophysics);* B. d'ANGLEJAN *(Marine Sciences);* R.L. CARROLL *(Redpath Museum)*

Opportunities for advanced study and research in Geology, Geochemistry and Geophysics are available to qualified students. Graduate programs leading to the M.Sc., M.Sc. (Applied), and Ph.D. degrees and to a diploma are offered.

Financial assistance is available in the form of demonstratorships, research assistantships and some scholarships.

ADMISSION AND REQUIREMENTS

Candidates are to indicate their field, or fields, of interest when making formal applications for admission. Specific inquiries concerning the department should be addressed to the Supervisor of Graduate Students, Department of Geological Sciences.

Applications and all supporting documents should be received in the department before July 1st for admission the following September.

Eligibility

Applicants should have an academic background equivalent to that of a McGill graduate in the honours or the major in geology program. The admissions committee may modify the requirements in

keeping with the field of graduate study proposed. In some cases a qualifying year may be required.

M.Sc. Degree

The M.Sc. degree program includes (a) three courses to be chosen with the approval of the research director and departmental chairman and (b) a thesis to be submitted according to the rules of the faculty.

Ph.D. Degree

The Ph.D. degree program includes (a) an approved program of courses to be selected in consultation with the student's director of research according to the student's particular interest and training (b) Comprehensive oral examinations at the end of the Ph.D. II year (c) Research and Ph.D. thesis followed by an oral examination. There are no language requirements for the Ph.D. degree.

Diploma

a) Applicants for the diploma must fulfill the requirements for entry into the Faculty of Graduate Studies and Research of McGill University and for graduate study in the Department of Geological Sciences, as stated in the Announcement.

b) The diploma will be awarded for the successful completion of one academic year of graduate studies comprising at least 3 graduate courses to be chosen with the approval of the Department.

c) Students who are awarded the diploma with high standing may be allowed to proceed to a higher degree and will be given appropriate credit towards such a degree. Students wishing to keep open the possibility of entering either the M.Sc. program with thesis or the M.Sc. (Applied) program are advised to follow a program which will satisfy the first year requirements for these programs.

M.Sc. (Applied) Degree

Two options are offered in the two-year non-thesis program for the M.Sc. (Applied) degree: A B Mineral Exploration and — Engineering Geology.

Option A — Mineral Exploration

The general aim of this two-year program is to train students to be capable of planning and carrying out effective exploration for mineral deposits, and of evaluating mineral deposits in various stages of development and production. Such students must be provided with:

1. a sound theoretical and practical background in the use of modern techniques of exploration,
2. additional information on the economic and technical considerations which distinguish ore bodies from other mineral deposits,
3. some insight into the legal and financial aspects of mineral exploration.

Applicants must have fulfilled the requirements for graduation in either (a) the McGill B.Sc. Honours or Major program in Geological Sciences or its equivalent, or (b) the McGill B.Eng. program in Mining, or its equivalent. They must have taken the following courses or their equivalents:

GEOLOGY 186-344A ORE MINERALS.
GEOLOGY 186-441D MINERAL DEPOSITS.
COMPUTER SCIENCE 308-200A.

If the total number of deficiencies is too great the student may have to take a "Qualifying year".

To provide a sound background to the problems of Mineral Exploration and allow a degree of specialization the curriculum consists of:

a) 8½ "core" or essential courses.
b) 3½ optional courses approved by the director of the program.

Applicants who have been working in industry for one or more years after graduation should provide one reference from industry and one from a former professor. Applicants coming directly from an undergraduate program must provide the normal (2) references from former professors.

Honours Geological Sciences Graduate — First Year

GEOLOGY 186-604D PETROLOGY OF MINERAL DEPOSITS
GEOLOGY 186-606D APPLIED GEOCHEMISTRY
GEOLOGY 186-612A APPLIED STRUCTURAL GEOLOGY
GEOLOGY 186-613B REGIONAL STRUCTURAL ANALYSIS
MINING 306-123A MINING INDUSTRY ECONOMICS I
MINING 306-225A AND -326B MATHEMATICAL APPLICATIONS IN THE MINING INDUSTRY

Mining Engineering Graduates — First -Year

Mining Engineering graduates will be accepted but in the above program will substitute courses required for the Honours Geology degree for the engineering subjects they have already had.

Common Second Year

GEOLOGY 186-535D PHOTOGEOLOGY
GEOLOGY 186-605D MINERAL EXPLORATION and MINING GEOLOGY
GEOLOGY 186-713D ADVANCED ECONOMIC GEOLOGY
MINING 306-331A and -433B ADVANCED EXPLORATION GEOPHYSICS I and II

Recommended Options

GEOLOGY 186-430B GEOLOGY OF ENERGY SOURCES
GEOLOGY 186-603A ENGINEERING GEOLOGY
GEOLOGY 186-609B GROUNDWATER GEOLOGY
GEOLOGY 186-710A GEOTECTONICS
GEOLOGY 186-716D ECONOMIC GEOLOGY LABORATORY

GEOLOGY 186-720D ASSIGNED READINGS AND SEMINAR
MINING 306-101B MINING ENGINEERING TECHNIQUES
MINING 306-123A MINERAL INDUSTRY ECONOMICS I
MINING 306-224B MINERAL INDUSTRY ECONOMICS II
MINING 306-241A MINERAL SEPARATION
MINING 306-420A MINING FEASIBILITY STUDIES I
MINING 306-436B ADVANCED EXPLORATION GEOPHYSICS IV
MINING 306-625D MINERAL INDUSTRY ECONOMICS

Candidates obtaining this degree with distinction may be accepted as candidates for the Ph.D. degree.

Candidates wishing to apply for Professional Engineer (P.Eng.) status must take 3 or more specified one-term courses in engineering. Some of these may be taken as electives.

Option B — Engineering Geology

The purpose of the two-year non-thesis graduate program in engineering geology is to enable geologists and engineers to develop an ability to apply knowledge of geological factors to the design, construction and maintenance of engineering structures.

During the first year of the two-year course, geology graduates and engineering graduates will follow different programs to broaden their basic knowledge and to bring both groups to a comparable level. Programs of a minimum of five full courses will be selected by the department according to the candidate's background and interest from the courses listed below. Appropriate substitutions may be approved. In the second year, the program will consist of four prescribed courses, as set forth in the following list of courses.

Honours Geological Sciences Graduates — First Year

GEOLOGY 186-603A ENGINEERING GEOLOGY
GEOLOGY 186-609B GROUND WATER GEOLOGY
GEOLOGY 186-535D PHOTOGEOLOGY
GEOLOGY 186-706D ADVANCED SEDIMENTOLOGY
GEOLOGY 186-707D GEOMORPHOLOGY
GEOLOGY 186-714D GLACIAL AND PLEISTOCENE GEOLOGY
GEOLOGY 186-715A INSTRUMENTAL ANALYSIS
GEOLOGY 186-721D RECENT SEDIMENTS AND MARINE GEOLOGY
MATHEMATICS 189-314A and 189-315B ADVANCED CALCULUS AND DIFFERENTIAL EQUATIONS
ENGINEERING 303-312B SOIL MECHANICS
ENGINEERING 303-208B DETERMINISTIC SYSTEMS
ENGINEERING 303-653A STREAM POLLUTION AND CONTROL
COMPUTER SCIENCE 308-200A or B INTRODUCTION TO DIGITAL COMPUTERS
MINING 306-230B GEOPHYSICAL EXPLORATION
MINING 306-321B BEHAVIOUR OF ROCK STRUCTURES
MINING 306-422A APPLIED EXPLOSIVES

ENGINEERING GRADUATES — FIRST YEAR

Basic geology courses as necessary.
GEOLOGY 186-603A ENGINEERING GEOLOGY
GEOLOGY 186-609B GROUND WATER GEOLOGY
ENGINEERING 303-312B SOIL MECHANICS
ENGINEERING 303-656A SYSTEMS ANALYSIS IN ENGINEERING
ENGINEERING 303-680A FUNDAMENTALS OF SOIL BEHAVIOUR
ENGINEERING 303-681B ENGINEERING ASPECTS OF SOIL BEHAVIOUR
ENGINEERING 303-682A APPLIED SOIL MECHANICS
ENGINEERING 303-683B ADVANCED FOUNDATION DESIGN
ENGINEERING 303-684A GROUND WATER AND SEEPAGE
ENGINEERING 303-685B DRAINAGE ENGINEERING
ENGINEERING 303-688A SOIL DYNAMICS
COMPUTER SCIENCE 308-200A or B INTRODUCTION TO DIGITAL COMPUTING
MINING 306-620A ROCK MECHANICS I
MINING 306-621 ROCK MECHANICS II
MINING 306-623D GROUND CONTROL AND FRAGMENTATION
MINING 306-331A ADVANCED EXPLORATION GEOPHYSICS I
MINING 306-433B ADVANCED EXPLORATION GEOPHYSICS II

SUMMER VACATION PROJECT

All candidates will work for at least two months on an approved engineering geology project. A report of this work will be required as part of the Geology 186-722D course in the second year program.

Common Second Year

GEOLOGY 186-722D ADVANCED ENGINEERING GEOLOGY
ENGINEERING 303-417A FOUNDATIONS
GEOLOGY 186-720D ASSIGNED READINGS AND SEMINAR or THREE SEMESTERS OF SOIL AND ROCK MECHANICS or OTHER APPROVED COURSES

GRADUATE COURSES

186-501B CRYSTAL CHEMISTRY. 2 hours lectures, 1 hour seminar; Prerequisite: Permission of the instructor). Discussion of crystal structures of important mineral groups, especially oxides, sulphides and silicates. Solid solution. Relation of structure to morphology and to chemical and physical properties of crystalline matter.
Professor Grice

* **186-502B CRYSTAL-STRUCTURE ANALYSIS.** (2 lectures). Elements of crystallography and diffraction physics basic to structure determination. Choice of crystal; principles underlying photographic and counter methods of collecting intensity data. Data reduction. F^2 synthesis. The phase problem. Trial and error methods, heavy-atom techniques, direct methods. Electrondensity calculation. Refinement of structure.
Professor Donnay

* **186-503D CRYSTAL-STRUCTURE DETERMINATION.** (6 hours laboratory; Prerequisite 186-211A, or 502B). Techniques of structure determination applied to a research problem.
Professor Donnay

* **186-504B CRYSTAL SYMMETRY.** (2 lectures). Derivation of the 32 crystallographic point groups (the geometric crystal classes), 14 translation groups (the Bravais lattices), 73 arithmetic crystal classes (isomorphic with symmorphic space groups) and 230 space groups. Atomic site symmetry vs crystal-structure symmetry. Effect of solid solutions on crystal symmetry. Symmetry information to be gained from X-ray diffraction; powder diagrams vs single-crystal patterns. Generalized symmetry applied to twinning and magnetic structures.
Professor Donnay

* **186-534D ADVANCED INVERTEBRATE PALEONTOLOGY.** (2 hours lectures, 1 hour seminar). Bias of fossil record; relationship of the phyla; taxonomy, classification, paleoecology, functional morphology and evolution of fossil invertebrates.
Professor Stearn

186-535D PHOTOGEOLOGY. (2 lectures, 2 hours laboratory). The interpretation of rock lithology and structure and surface deposits from air photographs, elementary photogrammetry.
Professor Elson

186-602D GEOLOGICAL COLLOQUIUM. (2 hours lectures or seminar and assignments). Introductin to graduate work in the geological sciences. The general course divisions are philosophy and history of the geological sciences, contemporary geological research, and socio-political relations of the earth sciences.
Professor Saull

186-603A ENGINEERING GEOLOGY. (2 hours lecture, 2 hours laboratory). Introduction to the application of geology in Civil Engineering.
Professor Grice

186-604D PETROLOGY OF MINERAL DEPOSITS. (2 hours lectures or seminar, 3 hours laboratory). Petrographic study of fresh and altered rocks associated with ore-deposits and discussion of processes involved in their formation.
Professor Stevenson

186-605D MINERAL EXPLORATION AND MINING GEOLOGY. (2 hours lectures, 2 hours laboratory and assigned problems). Methods of searching for mineral deposits; modern exploration programs; development of mineral deposits; evaluation of mineral deposits.
Professor Eakins

186-606D APPLIED GEOCHEMISTRY. (2 hours seminar and three hours laboratory). Principles governing the distribution of elements, particularly in the secondary stage of the geochemical cycle; the use of geochemistry in mineral exporation. Individual projects in applied geochemistry.
Professor Webber

186-609B GROUND WATER GEOLOGY. (2 hours lectures or seminar; 2 hours laboratory). Introduction to the geological aspects of ground water occurence and chemistry and to eementary ground water flow and well problems.
Professor Grice

186-610D PROBLEMS IN GEOLOGICAL SCIENCES. (2 hours lectures). Recent advances in the fields of geological time and the stratigraphic record, materials and processes of the crust, global tectonics and planetary geology, environmental geology and resources.
Professor Francis and Staff

186-612A APPLIED STRUCTURAL GEOLOGY. (2 hours lectures or seminar and 3 hours lab. or problems).
Professor Eakins

186-613B REGIONAL STRUCTURAL ANALYSIS (2 hours lectures, 2 hours laboratory). Interpretation of structural measurements in complexly deformed rocks. Regional geometric, kinematic and tectonic analysis.
Professor Hynes

186-700D PRELIMINARY DOCTORAL EXAMINATION.

186-703D ADVANCED MINERALOGY. (4 hours lectures or seminar and laboratory). Discussion of the chemical and optical variations, and current classifications within the more important mineral groups. The laboratory gives practice in the precise microscopic identification of individual members of these groups using oil immerson and universal stage techniques.
Professor Stevenson

186-704D GEOCHEMISTRY. (2 hours lectures or seminar and assignments). Current problems in geochemistry and cosmochemistry.
Professors Francis, Saull and Webber

186-705D PETROLOGY. (2 hours lectures or seminar). Selected topics on recent theoretical and experimental work in igneous and metamorphic petrology.
Professors Francis and Martin

186-706D ADVANCED SEDIMENTOLOGY. (2 hours lectures or seminar and 3 hours laboratory). Classical and recent papers on sedimentary rocks, processes and environments of transport, deposition and lithification, sedimentary mineral deposits. Basin evolution. Methods of study of sedimentary rocks and statistics.
Professors Hesse and Mountjoy

* **186-707D GEOMORPHOLOGY.** (2 hours lectures or seminar, and problems). Geological interpretation of topography, surficial processes and deposits.
Professor Elson

186-708D ADVANCED STRATIGRAPHY. (2 hours lectures or seminar, laboratory work). Problems of the stratigraphy of North America. The geological evolution of the continent as it is recorded in the Paleozoic, Mesozoic, and Cenozoic sedimentary rocks.
Professor Stearn

186-709D GEOLOGY OF PETROLEUM. (2 hours lectures or seminar). Theories of hydrocarbon and petroleum origin; migration of petroleum; character of the reservoir and condition of fluids and gases in it. Structural traps, stratigraphic traps. A brief survey of the petroleum resources of the world. Classical and recent papers on petroleum geology are discussed.
Professor Mountjoy

* **186-710A GEOTECTONICS** (2 hours lectures or seminars). The plate tectonic theory. Plate tectonics and orogenesis. Plate tectonics in the geologic past. Problems of tectonic evolution in the Precambrian.
Professor Hynes.

186-711D MINERALOGY OF CRYSTALLINE ROCKS. (2 hours lectures or seminar). A survey of the mineralogy of igneous and metamorphic rocks.
Professor Martin

* **186-712D X-RAY CRYSTALLOGRAPHY.**(6 hours laboratory; Prerequisite: Geology 186-211A). Techniques of x-ray diffraction applied to a crystallographic research problem.
Professor Donnay

186-713D ADVANCED ECONOMIC GEOLOGY. (4 hours lectures or seminar and assigned problems). Ore genesis; physical-chemical aspects of mineral deposits; classic examples and world distribution of mineral resources.
Professor MacLean

186-714D GLACIAL AND PLEISTOCENE GEOLOGY. (2 hours lectures or seminar). Glacial geology and the effects of glacial climates in peripheral areas; stratigraphy and chronology of the Quaternary Era.
Professor Elson

186-715A INSTRUMENTAL ANALYSIS. (1 hour lecture, 3 hours laboratory). Application of instrumental methods of analysis to materials of geological interest. Electron microprobe, optical spectography, x-ray spectrometry, x-ray diffraction, atomic absorption.
Professors MacLean and Webber

186-716D ECONOMIC GEOLOGY LABORATORY. (3 hours laboratory per week). Study of suites of ores and rocks from important mining districts. Specific projects may be undertaken.
Professor MacLean

186-717D ADVANCED EARTH PHYSICS. (3 hours lectures or seminar and assignments). Discussion of selected topics in earth physics.
Professors Saull and Telford

* **186-718A STRUCTURAL ANALYSIS OF DEFORMED ROCKS** (2 hours lectures or seminars). Modern topics in structural geology: fold mechanisms, measurement of strain, petrofabric analysis, development of cleavage, mechanisms of flow.
Professor Hynes

186-719D ISOTOPE GEOLOGY. (2 hours lectures or seminar). The nature of isotopes; mass spectrometry; geochronology; significance of certain isotope ratios in minerals and rocks.
Professor Doig

186-720D ASSIGNED READINGS AND SEMINAR. Field of study and director to be specified.

186-721D RECENT SEDIMENTS AND MARINE GEOLOGY. (Also Marine Sciences 395-721D). (2 hours seminar, lectures and assignments). Emphasizes recent research concerning sediments, sedimentary processes, and structure of continental margins, ocean basins and mid-ocean ridges. Sediment diagenesis. Chemistry of seawater and sediments. Evolution of ocean basins; sea-floor spreading and plate tectonics.
Professors d'Anglejan, Hesse and Mountjoy

186-722D ADVANCED ENGINEERING GEOLOGY. (2 hours seminar, 2 hours laboratory or assignments). Application of knowledge of geological materials and processes in the investigation, design, construction and maintenance of foundations and other engineering projects.
Professor Grice

E11 MARINE SCIENCES CENTRE

STAFF

Professors — M.J. DUNBAR *(Biology) (Chairman);* E.R. POUNDER *(Physics) (Vice-Chairman);* M.P. LANGLEBEN *(Physics);* J.B. LEWIS *(Director, Redpath Museum);* G. LAROCHE

Associate Professors — B.F. d'ANGLEJAN; C.M. LALLI

Assistant Professors — R.G. INGRAM; D.C. MACLELLAN; F. SANDER *(Director, Bellairs Research Institute)*
Senior Staff Demonstrator — R.A. BUCHANAN
Associate Members — M.E. GOLDSTEIN *(Biology)*; R. HESSE *(Geology)*; ROGER KNOWLES *(Microbiology)*; R.A. MACLEOD *(Microbiology)*; E.W. MOUNTJOY *(Geology)*; SVENN ORVIG *(Meteorology)*; H.M. REISWIG *(Redpath Museum)*; S.B. SAVAGE *(Civil Eng.)*

Graduate students will take such courses, including courses in other departments, as are considered necessary for their training and for the development of the particular fields of specialization. All students are expected to take course 177-442D (for this course, see Section B), 395-660D and 198-309A. Primary emphasis for both the M.Sc. and Ph.D. degrees is placed upon research and thesis presentation. The comprehensive examination for the Ph.D. candidates usually takes place at the end of the second year of study. It covers the whole field of marine science but allows for the specialized interests and training of each student, in Botany, Zoology, Microbiology, Physics or Geology.

Students are accepted on the basis of a 3.0 Cumulative Grade Point Average in an appropriate subject, or high standing in general science; a qualifying year in addition to the minimum degree requirement may be necessary, at the discretion of the Chairman or Vice-Chairman.

The Marine Sciences Centre is inter-departmental in scope, emphasizing the essential inter-disciplinary nature of the science of Oceanography. Excellent laboratory and library facilities are available for research, and opportunities for field work exist in the Arctic, the estuary of the St. Lawrence river, the Gulf of St. Lawrence, the Canadian Eastern Seaboard, and at the Bellairs Research Institute at Barbados. The special research interests of the Centre include the physics of sea ice, the energy exchange between the atmosphere and hydrosphere, marine climatology, the dynamics of estuaries, marine bacteria, growth and life cycles of marine organisms, marine productivity, marine biogeography and sedimentation.

Courses in the Physical Sciences are listed here; the whole list of courses offered (biological as well as physical) can be found in Section "B" of the *Announcement.*

COURSES FOR HIGHER DEGREES

Advanced Undergraduate Courses

198-309A DESCRIPTIVE OCEANOGRAPHY. (3 hours). Major physical and chemical properties of sea water; methods of measurements, space and time distribution. The geostrophic approximation and the dynamic method. General features of the oceanic circulation.
Professors d'Anglejan and Ingram

198-319B INTRODUCTION TO DYNAMICAL OCEANOGRAPHY. (3 hours). Equations of motion. Geostrophy. Boundary layers. Horizontal wind-driven circulation. Waves and tides.
Professor Ingram

GRADUATE COURSES

395-660D SEMINAR IN GENERAL OCEANOGRAPHY. (2 hours). An advanced seminar course on research in salt water environments, with emphasis on contemporary work. Discussion of the original literature, recent advances and basic theory.
Staff

395-695A PHYSICS OF THE OCEAN (3 hours). General circulation on "Beta" plane, wind and thermally driven flows. Two layer models. Boundary currents.
Professor Ingram

395-696B SEMINAR COURSE IN PHYSICAL OCEANOGRAPHY (2 hours). Theoretical aspects of the general oceanic circulation.
Professor Ingram

395-698B TOPICS IN OCEANOGRAPHY (3 hours). Interdisciplinary studies of selected topics, including: waves and tides, estuaries, short and long term cycles, factors controlling the vertical distribution of organisms, particulate matter and sedimentation.
Staff

E12 DEPARTMENT OF MATHEMATICS

STAFF

Professors — E ROSENTHALL *(Chairman)*; M. BARR; I. CONNELL; C. HERZ; H. KAUFMAN; J. LAMBEK; W. MOSER; H. RUBEN; V. SESHADRI; C. SOLIN; J. TAYLOR.
Professors (Visiting 1975-76) — J. DUGUNDJI.
Associate Professors — S. MELAMED *(Assistant Chairman)*; W. BROWN; J. CHOKSI; C. COSTLEY; S. DRURY; A. EVANS; D. GILDENHUYS; K. GOWRISANKARAN; M. HERSCHORN; W. JONSSON; E. KOUNIAS; J. LABUTE; B. LAWRUK; M. MAKKAI; A. MATHAI; S. NEGREPONTIS; T. OKUBO; B. RATTRAY; R. RIGELHOF; C. ROTH; N. SANCHO; G. SCHMIDT; G. STYAN; D. SUSSMAN; K. TAM; J. TURNER; R. VERMES.
Associate Professors (Visiting 1975-76) — E. THOMAS; Z. ZIEGLER.
Assistant Professors — W. ANDERSON; M. BUNGE; W. LANGFORD; S. MASLOWE; T. PAPAIOANNOU; E. ROWLINSON; K. RUSSELL; D. WOLFSON; S. ZLOBEC.
Assistant Professors (Visiting 1975-76) — W. FLEISSNER; C. GOWRISANKARAN; S. SHNIDER; R. STERN; B. TAYLOR.

Research Visitors 1975-76 — J. BEACHY; R. DIACONESCU; J. FISCHER; G. KLINCSEK; P. ROBERTS; S. SHNIDER; L. STOUT; A. SWETT; A. de la TORRE.

NOTE: A brochure "Information for Graduate Students in Mathematics" supplements the information contained in this Announcement and should be obtained from the Department.

REQUIREMENTS

Master's Degrees

The Department of Mathematics offers three distinct programs of study leading to the Master's degree. The requirements, in general, consist of a minimum of three courses and a thesis, although in certain cases four courses may be required. The requisite courses for the general program are 189-571D, 189-572D and 189-583A. In some instances 189-372D may be substituted for 189-572D. This program is recommended for students who intend to continue for the Ph.D. degree and are working in pure mathematics. Students who are working in applied mathematics, or probability and mathematical statistics, will generally be advised to enrol in courses other than 189-571D and 189-583A; for students in probability and statistics this will normally include 189-556D. There are two applied programs designed for students intending to pursue a career in industry and business after obtaining the Master's degree. In the Applied Mathematics program, students are required to pass three (in some instances four) full courses in mathematics. The requirements in the Applied Statistics program are normally four full courses, at least three of which must be taken in the Department of Mathematics. Courses are chosen after consultation with members of staff. All three programs require participation in assigned seminars and submission of a thesis. The thesis need not be an original contribution to knowledge, but may be of an expository nature.

Ph.D. Degree

To complete a Ph.D. program the student must: (a) pass six approved courses beyond the Bachelor's level; (b) pass a Comprehensive Examination consisting of a written Part A, which is concerned with his general mathematical background, and an oral Part B concerned with his specialities; (c) demonstrate facility in reading mathematical articles in English and French as well as one further language (e.g. German or Russian); (d) submit a thesis judged to be an original contribution to knowledge.

Courses

This Announcement is prepared early in the calendar year and will be modified by the time the academic year begins. An updated supplement is available at the Department Office and should be consulted. These changes will be important to a sensible choice of program.

NOTE: WITH THE CONSENT OF THE INSTRUCTOR, PREREQUISITES AND COREQUISITES FOR COURSES MAY BE WAIVED IN INDIVIDUAL CASES.

* **189-461D COMBINATORIAL MATHEMATICS.** (6 credits; Prerequisites: 189-242A or equivalent and 189-246A, B or equivalent. This course will be given in alternate years). After a study of fundamentals (partitions and compositions, principle of inclusion and exclusion, etc.) students will be introduced to combinatorial aspects of several fields (graph theory, designs, set theory, group theory, geometry, number theory, etc.) from classical up to and including current research.

189-489A MATHEMATICAL LOGIC. (3 credits). Propositional calculus and first order predicate calculus; completeness, compactness and normal form theorems; theorems of Harbrand, Craig, Beth and Gentzen.

189-490B MATHEMATICAL LOGIC. (3 credits). In alternate years either (1) an introduction to recursion theory, undecidability theorems of Godel and Church, recusively enumerable sets, degrees; or (2) an introduction to model theory, ultraproducts, saturated models, elimination of quantities, decidability.

* **189-551A COMPLEX ANALYSIS I.** (3 credits). Maximum modulus theorem. Rouche's theorem, Weierstrass and Vitali's theorem on convergence of holomorphic functions. Normal families. Conformal mapping, harmonic functions. Entire and meromorphic functions.

* **189-552B COMPLEX ANALYSIS II.** (3 credits). Selected topics from the theory of a complex variable.

* **189-555D FLUID DYNAMICS.** (6 credits). Kinematics. Dynamics of general fluid. Inviscid fluids. Navier-Stoke equations. Exact solutions of the Navier-Stokes equations. Perturbation methods. Flow at small Reynolds number. Flow at high Reynolds number. Stability.

189-556D MATHEMATICAL STATICS. (6 credits; Prerequisite: 189-357B or equivalent). Probability and distribution theory including discussion of some basic distributions in p-space. Regression and correlation theory. Laws of large numbers and central limit theorem. Sampling theory (including large-sample theory). Likelihood functions and information matrices. Hypothesis testing, estimation theory and decision theory. Distribution-free procedures.

189-571D HIGHER ALGEBRA. (6 credits; Prerequisite: 189-371D or equivalent). The rudiments of category theory, including adjoint functors; noetherian, artinian and semi-simple rings, representations of finite groups; a continuation of commutative algebra, prime ideals, localisation and completion; some algebraic number theory and a deeper study of field extensions.

189-572D REAL AND COMPLEX ANALYSIS. (8 credits; Prerequisites: 189-250A,B;-251A,B, 372D). The theory of measure and integration, basic Hilbert and Banach space theory, complex analysis from a modern viewpoint.

189-574A ORDINARY DIFFERENTIAL EQUATIONS. (3 credits; Prerequisite: 189-374D). Topics to be selected from the following; existence and uniqueness theorems, dependence of solutions on parameter and initial data, stability theory, perturbation methods, singular points, periodic systems, two point boundary-value problems.

* **189-575B PARTIAL DIFFERENTIAL EQUATIONS.** (3 credits; Prerequisite: 189-374D). A continuation of topics introduced in 189-374D.

189-578A NUMERICAL ANALYSIS (3 credits; prerequisite: 189-372D). Basic error analysis; numerical solutions of non-linear equations by fixed point methods, interpolation, numerical integration and numerical solutions of ordinary differential equations.

* **189-579B NUMERICAL ANALYSIS.** (3 credits; Prerequisites: 189-250A,B-251A,B). Basic linear algebra, spectral radius, vector and matrix norms. Numerical linear algebra, solution of linear systems by direct and iterative methods, least squares solutions, computation of eigenvalues and eigenvectors, ill-conditioned systems. Solution of non-linear systems of equations, Banach's fixed point theorem. Polynomial approximation, least-squares and uniform approximation. Boundary-value problems for different equations.

* **189-581D DIFFERENTIAL GEOMETRY.** (6 credits; Prerequisite: 189-380D). The geometry of differential manifolds.

189-583A TOPOLOGICAL SPACES. (3 credits). Bases, connectedness, convergence, product and quotient spaces, metrization, compactness, function spaces.

189-585A INTEGRAL EQUATIONS AND TRANSFORMS. (3 credits). Introduction to the theory of Hilbert spaces. Fredholm and Volterra integral equations; exact and approximate solutions. Equations with Hermitian kernels. Hilbert-Schmidt theorem and consequences. Representation formulas for the solutions of initial and boundary value problems. Green's functions. Integral Transforms. Applications.

189-586B ADVANCED BOUNDARY AND INITIAL VALUE PROBLEMS. (3 credits; Prerequisites: 189-316B, 374D, or equivalent). Partial differential equations of applied mathematics. Dirichlet and Newmann problems; complex variable methods. Homogeneous and non-homogeneous problems; Green's functions, integral transform methods, variational techniques. Pertubation theory. Applications.

189-587D ADVANCED PROBABILITY THEORY. (6 credits; Prerequisite: 189-356A or equivalent). Distribution functions on R^1. Basic measure and integration theory, with special reference to probability measures on (R^1, B^1) and their correspondence with distribution functions. Random variables. Expectation, including basic inequalities. Independence. Conditional probability. Convergence concepts, laws of large numbers. Characteristic functions. Central limit theorem and its ramifications. Random walks.

* **189-588D ALGEBRAIC TOPOLOGY.** (6 credits). Introduction to homology and homotopy.

* **189-602A,B ANALYTIC NUMBER THEORY I.** Arithmetical functions, elementary theory of the distribution of primes. Proof of the prime number theorem, Dirichlet's theorem on number of primes in arithmetic progression. Asymptotic and convergent formulas for the partitions of n. (A student will normally enrol in both 189-602 and 189-702. The course description is common).

* **189-603A,B LIE GROUPS AND LIE ALGEBRAS I.** Representation of linear groups and their Lie algebras. Commutative, nilpotent and solvable ideals of Lie algebras. Classification of classical simple Lie groups by means of Cartan's sub-algebras. Weights of irreducible representation and structure of semi-simple Lie algebras. (A student will normally enrol in both 189-603 and 189-703. The course description is common).

* **189-611A,B ALGEBRAIC NUMBERS I.** Integral closure. Dedekind domains. Valuations, completions and local fields. Ramification and the different. The discriminant. The groups of units and ideal classes. Adeles and ideles. (A student will normally enrol in both 189-611 and 189-711. The course description is common).

* **189-612A,B ALGEBRAIC CURVES I.** A concrete introduction to algebraic geometry. Topics may vary from year to year and will include: plane algebraic curves, function fields in one variable, linear series and the theory of Riemann-Roch, elliptic curves. (A student will normally enrol in both 189-612 and 189-712. The course description is common).

* **189-614A,B THEORY OF RINGS I.** Rings and modules. Prime and maximal ideals. Radicals. Semi-simple Artinian rings, semiperfect rings, semiprime Noetherian rings. Projective, injective and flat modules. Morita theory. Rings of quotients, localization and completion. Grouprings. (A student will normally enrol in both 189-614 and 189-714. The course description is common).

189-615A COMMUTATIVE ALGEBRA I. Localization and completion. Primary decomposition. Dimension theory. Homological theory of Noetherian rings. Regular sequences Kähler differentials. Unramified, smooth and étale extensions. The spectrum of a commutative ring and other applications to algebraic geometry. (Normally, a student will enrol

in both 189-615 and 189-715. The course description is common).

* **189-616A,B HOMOLOGICAL ALGEBRA I.** Modules. Diagrams. Free, injective, projective and flat modules. Tensor product and Hom. Derived functors. Dimension theory. Local rings. Cohomology of groups. (A student will normally enrol in both 189-616 and 189-716. The course description is common).

189-617A CATEGORIES I. Categories, functors, natural transformations. Adjoint functors and limits. Embeddings and completions. Algebraic categories and standard constructions. Abelian and homological categories. Categories and the foundations of mathematics. (A student will normally enrol in both 189-617 and 189-717. The course description is common).

* **189-618A,B ADVANCED GROUP THEORY I.** The structure of groups. Special classes of groups. Representation theory. Additional topics to suit the class. (A student will normally enrol in both 189-618 and 189-718. The course description is common).

189-619B APPLIED CATEGORY THEORY I. Review of adjoint functors, triples and their algebras. Localization with applications to modules, topological spaces and sheaves. Duality theory with applications to Morita theory and the duality theorems of Pontrjagin, Stone, Gelfand and Kaplansky. Categories and deductive systems. Introduction to toposes. Applications to computer science and linguistics. (A student normally will enrol in both 189-619 and 189-719. The course description is common).

189-631A COMPLEX FUNCTION THEORY I. (Prerequisite 189-572D or equivalent). Advanced topics in one complex variable, and some topics in several complex variables.

* **189-633A,B HARMONIC ANALYSIS I.** (Prerequisites 189-372D or preferably 189-572D). Classical harmonic analysis on the circle (Fourier series) and on the line (Fourier integrals). A brief introduction to harmonic analysis on locally compact groups.

* **189-635A,B FUNCTIONAL ANALYSIS I.** (Prerequisite 189-572D). Banach spaces. Hilbert spaces and linear operators on these. Spectral theory. Banach algebras. A brief introduction to locally convex spaces. (A student will normally enrol in both 189-635 and 189-735. The course description is common).

* **189-637A,B PARTIAL DIFFERENTIAL EQUATIONS I.** A modern introduction to the theory of linear differential equations, using the theory of distribution and Fourier transforms.

189-639A INTRODUCTION TO POTENTIAL THEORY. Classical potential theory. Dirichlet problem. Harmonic and superharmonic functions. Introduction to modern axiomatic potential theory.

180-651A ASYMPTOTIC EXPANSION AND PERTURBATION METHODS. Asymptotic series. Summation. Asymptotic estimation of integrals. Regular and singular perburbation problems and asymptotic solution of differential equations.

189-653B ADVANCED TOPICS IN FLUID DYNAMICS I. Topics selected from linear and nonlinear stability theory and waves, rotating flows, geophysical fluid dynamics, linearization and perturbation methods applied to the nonlinear partial differential equations of fluid mechanics.

* **189-654A,B ADVANCED TOPICS IN FLUID DYNAMICS II.** Topics selected from linear and nonlinear stability theory and waves, rotating flows, geophysical fluid dynamics, linearization and perturbation methods applied to the nonlinear partial differential equations of fluid mechanics.

* **189-655A,B TOPICS IN DIFFERENTIAL EQUATIONS I.** Specialized topics in ordinary and partial differential equations such as stability, bifurcation, qualitative theory of non-linear systems, boundary value problems, advanced solution techniques.

* **189-656A,B TOPICS IN DIFFERENTIAL EQUATIONS II.** Specialized topics in ordinary and partial differential equations such as stability, bifurcation, qualitative theory of nonlinear systems, boundary value problems, advanced solution techniques.

* **189-657A,B ADVANCED NUMERICAL ANALYSIS I.** Specialized topics in numerical analysis such as the solution of ordinary and partial differential equations, advanced computational linear algebra, numerical optimization, approximation theory.

* **189-658A,B ADVANCED NUMERICAL ANALYSIS II.** Specialized topics in numerical analysis such as the solution of ordinary and partial differential equations, advanced computational linear algebra, numerical optimization, approximation theory.

189-659B OPTIMIZATION I. This course together with 189-660, 189-661, 189-662 will cover basic areas in optimization such as linear and nonlinear programming, dynamic programming, the calculus of variations and optimal control theory, optimization in abstract spaces.

* **189-660A,B OPTIMIZATION II.** This course together with 189-659, 189-661, 189-662 will cover basic areas in optimization such as linear and nonlinear programming, dynamic programming, the calculus of variations and optimal control theory, optimization in abstract spaces.

* **189-661A,B OPTIMIZATION III.** This course together with 189-659, 189-660, 189-662 will cover basic areas in optimization such as linear and nonlinear programming, dynamic programming, the calculus of variations and optimal control theory, optimization in abstract spaces.

* **189-662A,B OPTIMIZATION IV.** This course together with 189-659, 189-660, 189-661 will cover basic areas in optimization such as linear and non-

linear programming, dynamic programming, the calculus of variations and optimal control theory, optimization in abstract spaces.

* **189-670A,B STOCHASTIC PROCESSES.** Basic concepts. Stationary and nonstationary processes. Correlation function. Power spectra. Linear systems. Mean square periodicity and Fourier series. Sampling theorems. Series expansions. Linear mean square estimation.

189-671B APPLICATIONS OF STOCHASTIC PROCESSES. Discrete parameter Markov chains, including branching processes and random walks. Limit theorems and ergodic properties of Markov chains. Continuous parameter Markov chains, including the general birth and death process. Selected topics from the following areas: renewal processes, queueing theory, Brownian motion, storage and inventory, statistical inference for stochastic processes.

* **189-672A,B ESTIMATION.** The theory of point and set estimation of parameters in statistical models. This includes Bayesian and decision-theoretic approaches.

* **189-673A,B TESTS OF HYPOTHESES I.** A systematic study of the modern theory of testing statistical hypotheses, with applications.

* **189-674A,B EXPERIMENTAL DESIGN I.** Optimal regression designs. Optimal N-observation designs. Algorithms for generating optimal designs. Latin squares and orthogonal arrays. Balanced incomplete block designs, association schemes. Factorial and fractional factorial designs. Confounding aliasing construction of designs.

189-675A NONPARAMETRIC STATISTICS I. Theoretical aspects of order statistics: distributions, moments, product moments. Tests based on the sample distribution function. Statistics of the Kolmogorov-Smirnov type. Applied aspects of various nonparametric tests: description, illustration, theoretical justification, comparisons.

189-676B MULTIVARIATE ANALYSIS I. Properties of the multivariate normal distribution. Central and noncentral Wishart distribution. Statistical inference for multivariate normal popluations. Hotelling's T^2. The product-moment correlation coefficient. Canonical correlations. Multivariate linear models. Principal components. Factor analysis.

* **189-677A,B DECISION THEORY I.** Formulation of the statistical decision problem. Bayes and minimax solutions. Hypothesis testing and estimation from the point of view of decision theory. Sequential analysis.

* **189-678A,B ADVANCED STATISTICAL METHODS I.** Statistical data analysis, with special reference to applications of the main statistical methods to problems in medicine, biology, chemistry, etc. Extensive use of computer methods, especially subroutine packages for statistical data description, display and analysis.

189-679B ADVANCED STATISTICAL METHODS II. Continuation of 189-678.

189-681A TIME SERIES ANALYSIS. Stationary stochastic processes. Autocovariance and autocovariance generating functions. Spectral distribution function and spectral density. The periodogram. Model estimation. Likelihood function. Estimation for autoregressive moving average and mixed processes. Computer simulation; diagnostic checking, tests with residuals. Estimation of spectral density; Bartlett, Daniell, Blackman-Tukey spectral windows. Asymptotic moments of spectral estimates.

189-682A MATRIX THEORY WITH STATISTICAL AND OTHER APPLICATIONS: Inequalities for trace and rank. Generalized inverses; idempotent matrices. Schur complement. Factorizations into triangular and diagonal form; singular values. Normal matrices. Algebraic and geometric multiplicity. Computational procedures; Householder transformations, condition number. Applications to least squares. Courant-Fischer min-max theorem; related inequalities. Quadratic forms in normal variables: distribution, characteristic function, cumulants and independence

189-683A LINEAR MODELS. General univariate linear models with full rank and with less than full rank. Best linear unbiased estimators. General linear hypothesis. Computational procedures. Weighted least squares. Analysis of variance with equal and unequal numbers in cells. Latin squares, complete factorial designs. Prediction and confidence bands, multiple comparisons. Random effects models.

* **189-684A,B ADVANCED SAMPLING TECHNIQUES.** Sampling and subsampling of clusters (one-stage, two-stage, and multi-stage). Unequal probability sampling with and without replacement. Double-sampling procedures. Repetitive surveys. Non-sampling errors (analytical and practical treatment). Analytical surveys. Optimization problems in sampling. Topics on the foundations of sample surveys. Other recent developments.

* **189-687A READING COURSE IN MATHEMATICAL LOGIC I.** A highly specialized study.

* **189-688B READING COURSE IN MATHEMATICAL LOGIC II.** A highly specialized study.

* **189-689A READING COURSE IN ALGEBRA I.** A highly specialized study.

* **189-690B READING COURSE IN ALGEBRA II.** A highly specialized study.

* **189-691A READING COURSE IN GEOMETRY AND TOPOLOGY I.** A highly specialized study.

* **189-692B READING COURSE IN GEOMETRY AND TOPOLOGY II.** A highly specialized study.

* **189-693A READING COURSE IN ANALYSIS I.** A highly specialized study.

* **189-694B READING COURSE IN ANALYSIS II.** A highly specialized study.

* **189-695A READING COURSE IN APPLIED MATHEMATICS I.** A highly specialized study.

* **189-696B READING COURSE IN APPLIED MATHEMATICS II.** A highly specialized study.

* **189-697A READING COURSE IN STATISTICS AND PROBABILITY I.** A highly specialized study.

* **189-698B READING COURSE IN STATISTICS AND PROBABILITY II.** A highly specialized study.

189-700D COMPREHENSIVE EXAMINATION: PART A. — WRITTEN

189-701D COMPREHENSIVE EXAMINATION: PART B. — ORAL

* **189-702A,B ANALYTIC NUMBER THEORY II.** Arithmetical functions, elementary theory of the distribution of primes. Proof of the prime number theorem, Dirichlet's theorem of number of primes in arithmetic progression. Asymptotic and convergent formulas for the partitions of n. (A student will normally enrol in both 189-602 and 189-702. The course description is common).

* **189-703A,B LIE GROUPS AND LIE ALGEBRAS II.** Representation of linear groups and their Lie algebras. Commutative, nilpotent and solvable ideals of Lie algebras. Classification of classical simple Lie groups by means of Cartan's sub-algebras. Weights of irreducible representation and structure of semi-simple Lie algebras. (A student will normally enrol in both 189-603 and 189-703. The course description is common).

* **189-704A,B TOPICS IN MATHEMATICAL LOGIC I.**

* **189-705A,B TOPICS IN MATHEMATICAL LOGIC II.**

189-706A,B TOPICS IN GEOMETRY AND TOPOLOGY I.

189-707A,B TOPICS IN GEOMETRY AND TOPOLOGY II.

* **189-708A,B TOPICS IN GEOMETRY AND TOPOLOGY III.**

* **189-709A,B TOPICS IN GEOMETRY AND TOPOLOGY IV.**

* **189-711A,B ALGEBRAIC NUMBERS II.** Integral closure. Dedekind domains. Valuations, completions and local fields. Ramification and the different. The discriminant. The groups of units and ideal classes. Adeles and ideles. (A student will normally enrol in both 189-611 and 189-711. The course description is common).

* **189-712A,B Algebraic Curves II.** A concrete introduction to algebraic geometry. Topics may vary from year to year and will include: plane algebraic curves, function fields in one variable, linear series and the theory of Riemann-Roch, elliptic curves. (A student will normally enrol in both 189-612 and 189-712. The course description is common).

* **189-714A,B THEORY OF RINGS II.** Rings and modules. Prime and maximal ideals. Radicals. Semisimple Artinian rings, semiperfect rings, semiprime Noetherian rings. Projective, injective and flat modules. Morita theory. Rings of quotients, localization and completion. Groupings. (A student will normally enrol in both 189-614 and 189-714. The course description is common).

189-715B COMMUTATIVE ALGEBRA II. Localization and completion. Primary decomposition. Dimension theory. Homological theory of Noetherian rings. Regular sequences. Kähler differentials. Unramified, smooth and étale extensions. The spectrum of a commutative ring and other applications to algebraic geometry. (Normally, a student will enrol in both 189-615 and 189-715. The course description is common).

* **189-716A,B HOMOLOGICAL ALGEBRA II.** Modules. Diagrams. Free, injective, projective and flat modules. Tensor product and Hom. Derived functors. Dimension theory. Local rings. Cohomology of groups. (A student will normally enrol in both 189-616 and 189-716. The course description is common).

* **189-717A,B CATEGORIES II.** Categories, functors, natural transformations. Adjoint functors and limits. Embeddings and completions. Algebraic categories and standard constructions. Abelian and homological categories. Categories and the foundations of mathematics. (A student will normally enrol in both 189-617 and 189-717. The course description is common).

* **189-718A,B ADVANCED GROUP THEORY II.** The structure of groups. Special classes of groups. Representation theory. Additional topics to suit the class. (A student will normally enrol in both 189-618 and 189-718. The course description is common).

* **189-719A,B APPLIED CATEGORY THEORY II.** Review of adjoint functors, triples and their algebras Localization with applications to modules. Topological spaces and sheaves. Duality theory with applications to Morita theory and the duality theorems of Pontrjagin, Stone, Gelfand and Kaplansky. Categories and deductive systems. Introduction to toposes. Applications to computer science and linguistics. (A student normally will enrol in 189-619 and 189-719. The course description is common).

* **189-720A,B TOPICS IN ALGEBRA I.** This course covers an advanced topic in some branch of algebra.

* **189-721A,B TOPICS IN ALGEBRA II.** This course covers an advanced topic in some branch of algebra.

* **189-722A,B TOPICS IN ALGEBRA III.** This course covers an advanced topic in some branch of algebra.

* **189-723A,B TOPICS IN ALGEBRA IV.** This course covers an advanced topic in some branch of algebra.

* **189-724A,B TOPICS IN ALGEBRA V.** This course covers an advanced topic in some branch of algebra.

* **189-725A,B TOPICS IN ALGEBRA VI.** This course covers an advanced topic in some branch of algebra.

189-731B COMPLEX FUNCTION THEORY II. (Prerequisite 189-631.) Topics in the theory of functions of several complex variables.

* **189-733A,B HARMONIC ANALYSIS II.** (Prerequisites 189-633, 189-635 and 189-735.) The contents of this course will consist of further topics in classical harmonic analysis and a more detailed study of abstract harmonic analysis on locally compact groups.

* **189-735A,B FUNCTIONAL ANALYSIS II.** (Prerequisites 189-572D 189-635.) Banach spaces. Hilbert spaces and linear operators on these. Spectral theory. Banach algebras. A brief introduction to locally convex spaces. (A student will normally enrol in both 189-635 and 189-735. The course description is common).

* **189-737A,B PARTIAL DIFFERENTIAL EQUATIONS II.** (Prerequisite 189-637). A continuation of the theory covered in 189-637.

189-738A STUDENT SEMINAR IN ANALYSIS I. This seminar, which is given in alternate years with 189-739, covers some topic in analysis of a fundamental nature or of considerable current interest. Each course is taken, in successive years, by Ph.D. students in analysis: the students give lectures expounding research papers on the topic in question. The member of the staff in charge, starts the seminar, guides the students in their preparation and takes over the exposition at difficult stages.

* **189-739A,B STUDENT SEMINAR IN ANALYSIS II.** This seminar, which is given in alternate years with 189-738, covers some topic in analysis of a fundamental nature or of considerable current interest. Each course is taken, in successive years, by Ph.D. students in analysis: the students give lectures expounding research papers on the topic in question. The member of the staff in charge, starts the seminar, guides the students in their preparation and takes over the exposition at difficult stages.

189-740B TOPICS IN ANALYSIS I. This course covers an advanced topic in some branch of analysis. (Topic for 1976-77: potential theory).

189-741B TOPICS IN ANALYSIS II. This course covers an advanced topic in some branch of analysis.

189-742A TOPICS IN ANALYSIS III. This course covers an advanced topic in some branch of analysis.

* **189-743A,B TOPICS IN ANALYSIS IV.** This course covers an advanced topic in some branch of analysis.

* **189-744A,B TOPICS IN ANALYSIS V.** This course covers an advanced topic in some branch of analysis.

* **189-745A,B TOPICS IN ANALYSIS VI.** This course covers an advanced topic in some branch of analysis.

* **189-761A,B TOPICS IN APPLIED MATHEMATICS I.** This course covers some advanced topic in applied mathematics.

* **189-762A,B TOPICS IN APPLIED MATHEMATICS II.** This course covers some advanced topic in applied mathematics.

* **189-763A,B TOPICS IN APPLIED MATHEMATICS III.** This course covers some advanced topic in applied mathematics.

* **189-764A,B TOPICS IN APPLIED MATHEMATICS IV.** This course covers some advanced topic in applied mathematics.

* **189-771A,B TOPICS IN STOCHASTIC PROCESSES I.** This course covers some advanced topic.

* **189-772A,B TOPICS IN STOCHASTIC PROCESSES II.** This course covers an advanced topic.

* **189-782A,B TOPICS IN STATISTICS AND PROBABILITY I.** This course covers an advanced topic.

* **189-783A,B TOPICS IN STATISTICS AND PROBABILITY II.** This course covers an advanced topic.

* **189-784A,B TOPICS IN STATISTICS AND PROBABILITY III.** This course covers an advanced topic.

* **189-785A,B TOPICS IN STATISTICS AND PROBABILITY IV.** This course covers an advanced topic.

189-791D SEMINARS IN MATHEMATICAL LOGIC.

189-792D SEMINARS IN ALGEBRA.

189-794D SEMINARS IN GEOMETRY AND TOPOLOGY.

189-795D SEMINARS IN CURRENT RESEARCH IN ANALYSIS.

189-796D SEMINARS IN ANALYSIS.

189-797D SEMINARS IN APPLIED MATHEMATICS.

189-798D SEMINARS IN STATISTICS AND PROBABILITY.

E13 DEPARTMENT OF MECHANICAL ENGINEERING

STAFF

Professors — J.W. STACHIEWICZ *(Chairman);* D.R. AXELRAD; W. BRUCE; J.H.S. LEE; B.G. NEWMAN

Associate Professors — A.M. AHMED; G.G. BACH; J.C. CHERNA; G. FEKETE; J.M. FORDE; R. KNYSTAUTAS; L. KOPS; C.L. MURPHY; M.P. PAIDOUSSIS; D. PFEIFFER; J.W. PROVAN; A.L. THOMPSON; J.H.T. WU; P.J. ZSOMBOR-MURRAY

Assistant Professors — CHRISTIANNE GUIRAO; R. HOFFMAN

Honorary Lecturers — D. ATACK

Special Lecturer — L.J. VROOMEN

Advanced courses and laboratory facilities are offered for graduate study leading to the M.Eng. and the Ph.D. degrees in Mechanical Engineering.

Graduate studies and research are at present being conducted in the fields of fluid mechanics, mechanics of solids, aerodynamics, heat transfer, gasdynamics, aeroballistics, mechanical design hydroelasticity, conventional and unconventional machining processes, machine tool design and automatic control systems. Current problems deal with such matters as high temperature measurements; air intakes at hypersonic speeds; reactive turbulent free-mixing flow; mixing and supersonic combustion; imploding gaseous detonation; shock stability and attenuation; supersonic aerodynamics; shock boundary layer interactions; fluidic and other control systems; pressure, temperature, turbulence phenomena; jets and wakes; wall jets in subsonic flow; coanda effect; boundary layer control; heat transfer characteristics of flat plates, finned surfaces, two-phase systems, free and forced convection; friction and wear; materials at high rates of strain; viscoelastic behaviour of materials; micromechanics of solids, stress holography, advanced continuum mechanics; flow-induced vibration, hydroelastic stability, random vibration of shells; mechanical properties of fibrous media; electrochemical machining, grinding, thermal deformation of machine tools; mathematical modelling of processes for control systems and control applications.

Facilities include wind tunnels, water tunnel, a high enthalpy jet, shock chambers and tubes, high temperature chambers for testing materials and machine tools for conventional and unconventional (ECM. EDM.) methods of machining. The laboratories are equipped with advanced instrumentation including X-ray equipment, lasers, hot-wire anemometers and a data acquisition and control computer with remote-access terminals.

ADMISSION

The general rules of the Faculty apply. Candidates who come from other institutions are expected to have an academic background equivalent to the undergraduate curriculum in mechanical engineering at McGill or to make up any deficiencies in a qualifying year. Applicants are requested to state in as much detail as possible their particular field of interest for graduate study.

REQUIREMENTS

M.Eng. (Option A) Degree

This is an option in which a research thesis, course 305-609 and six other courses that are necessary for progress in their selected field of research are required. Normally other courses are required and are selected in consultation with the candidate's director of research. Selections are made from those listed below, from courses offered by other engineering departments or from cognate courses given in other faculties. All qualified students are accepted tentatively pending their performance in this course work. Their registration is confirmed at the end of the second semester. Students who do not hold an undergraduate engineering (or equivalent) degree and who are accepted into this option will register for the M.Sc. degree. This applies particularly to students engaged in interdisciplinary research. A thesis describing the candidate's research is to be submitted in accordance with the rules of the Faculty and is the major requirement for the degree

M.Eng. (Option B) Degree

This is a course-type of Master's degree which requires twelve graduate courses, including a design project which is equivalent to two semester courses, and the seminar course 305-609. Of the remaining nine courses a maximum of three may be taken from courses offered by other engineering departments or from cognate courses given in other faculties. A departmental supervisor will be appointed for each incoming student and the student's design project will be approved by the department's Option B Committee.

Ph.D. Degree

Candidates normally register for the M.Eng. degree in the first instance. However, in exceptional cases where the research work is proceeding very satisfactorily, or where the equivalent of the M.Eng. degree has been completed at another university, candidates may be permitted to proceed directly to the Ph.D. degree without submitting a master's thesis as long as they have satisfied the course requirements for the M.Eng. degree. Courses of study selected for a Ph.D. program will depend upon the existing academic qualifications of the candidate and those needs for effective prosecution of research. Candidates are encouraged to undertake an additional course of study of their own choice

and of two years duration in some field of the humanities or in one of the sciences not directly related to their research. Candidates are required to pass a preliminary oral examination within about 6 mounts of their initial registration for the Ph.D. degree.

COURSES FOR HIGHER DEGREES

In the 1975-76 academic session 78 graduate students were registered in the Department. Of the 40 courses listed below, 9 were not given and 10 were cancelled due to lack of numbers.

The following courses available in the undergraduate curriculum of the Mechanical Engineering Department may be selected for Graduate credit provided that both of the following conditions are met:

i) it is recommended by the candidate's supervisor,
ii) no equivalent course was taken during the candidate's undergraduate program.

305-142A STATISTICAL THERMODYNAMICS

* **305-220B STATISTICAL MECHANICS**

305-272A MACHINING PROCESSES

305-331B GAS DYNAMICS

305-333B AERODYNAMICS: IDEAL FLUID THEORY

305-411B SYSTEMS CONTROL II

COURSES OPEN TO QUALIFIED UNDERGRADUATES

305-502A TOPICS OF ADVANCED MATHEMATICS FOR ENGINEERS I. Various aspects of elementary set theory, topology, mappings, linear operators, functionals, functional analysis and variational principles, as applied to engineering research problems. (Text: Simmons: introduction to Topology and Modern Analysis; McGraw-Hill).
Professor Provan

305-503B TOPICS OF ADVANCED MATHEMATICS FOR ENGINEERS II. (Prerequisite: 305-502A). Various aspects of algebraic spaces, measure theory, Lebesque integration, probability algebra and the theory of distributions as applied to engineering research problems.
Professor Provan

305-507X NUMERICAL ANALYSIS FOR COMPUTER USERS I. Various topics from numerical analysis are selected with an eye to computer usage. Review of finite differences, interpolation and quadrature, ordinary differential equations.
Professor Bach

305-515A INDUSTRIAL AERODYNAMICS. Characteristics of the earth's boundary layer, flow patterns around buildings and structures, their effect on the dispersal of pollutants, modelling and model testing, wind tunnel corrections, shelter provided by buildings, pressure distribution over buildings providing data for the structural designer, wind-included oscillations of buildings and structures.
Professor Fekete

305-534A CONTINUUM MECHANICS I. Mathematical preliminaries. The Cauchy and Piola stress tensors. Strain and deformation theory. Finite strains and deformation gradients. Rate of deformation tensor. General theory of continuous media. Internal energy. Enthropy as a functional in continuum theory.
Professor Axelrad or Professor Provan

305-535B CONTINUUM MECHANICS II. (Prerequisite: 305-534A). Constitutive theory and material symmetry. Three-dimensional Navier equation of motion. Classical elasticity and elastic potential theory. The Papkovich-Neuber Potential. Linear viscoelasticity. Metal plasticity and plastic constitutive equations. Linear thermoelasticity. The thermoelastic potential.
Professor Axelrad or Professor Provan

305-560B BIOMECHANICS OF TISSUES. Tissue biomechanics is the study of the response of biological tissue to forces and deformations to which it is subjected. Tissues such as bone, tendon and ligament act to transmit load and together with the contractile ability of muscle, provide a means for locomotion. The course emphasizes the fundamentals of continuum mechanics in relation to the morphological classification of various tissues. Basic principles of viscoelasticity aid the student in understanding the rate sensitivity of biological materials. The stress-strain-time or constitutive equations for soft connective tissue components is determined. The mechanical response of muscle tissue in the passive and stimulated states is also examined.
Staff.

COURSES FOR GRADUATE STUDENTS ONLY

305-603A,B, or C DESIGN PROJECT I. A design project undertaken under the direct supervision of at least one staff member. Examination entails the writing of a report which is examined internally by the supervisor and another staff member appointed by the Option B Committee of the Mechanical Engineering Department.
Staff

305-604A,B, or C DESIGN PROJECT II. A continuation of 305-603A,B, or C.

305-605A APPLIED MATHEMATICS I. Cartesian tensors and an introduction to curvilinear tensors. A review of differential equations and a development of mathematical techniques, such as Fourier series and transform techniques, leading to their solution. Partial differential equations and approximate methods of solution.
Professor Bach

305-606B APPLIED MATHEMATICS II. (Prerequisite: 305-605A). Applications of the techniques developed in 305-605A to problems in stress analysis, fluid dynamics, heat transfer, chemical diffusion and vibrations. Elementary numerical analysis.
Professor Bach

305-608Y NUMERICAL ANALYSIS FOR COMPUTER USERS II. (Prerequisite: 305-507X or equivalent). Partial differential equations, matrices, Monte-Carlo methods, linear programming and statistics.
Professor Bach

305-609B,C SEMINAR. All candidates for a Master's degree are required to participate and to deliver one paper dealing with their particular area of research or interest.
Professor Provan

305-610A FUNDAMENTALS OF FLUID MECHANICS. Origin of macroscopic properties of continuous media (pressure, density, temperature, transport coefficients) and reconciliation with molecular structure of matter. The generalized Bolzmann and hydrodynamic equations. Continuum formulation of the hydrodynamic and magneto-hydrodynamic equations. Dimensional analysis and parametric studies of the Navier-Stokes equations. Selected examples of exact solutions. Flow between parallel plates with heat transfer and electromagnetic forces. Couette flow and flow between rotating cylinders (incompressible and compressible). Suddenly-accelerated flat plate. Normal shock structure. Parametric expansion of the Navier-Stokes equation and the classification of the various classes of fluid motions (i.e., Stokes, potential, subsonic, supersonic, hypersonic, etc.)
Professors Lee and Knystautas

305-611B STEADY COMPRESSIBLE AERODYNAMICS. Expansion and compression waves in two-dimensional homenergic and irrotational flow. Prandtl-Glauert and Gothert similarity rules for subsonic and supersonic flow. Crocco theorem of vorticity. Shock formation in a supersonic flow over a curved wall. Method of characteristics for two-dimensional and axially symmetric flow. Two-dimensional and axially symmetric supersonic nozzles and jets. Ackeret supersonic aerofoil theory. Supersonic flow past wings of finite span. Axially symmetric supersonic, isentropic and non-isentropic flow over a cone. Shock bifurcation in ducts. Boundary layer separation owing to shock wave. Shock reflection from boundary layer on flat plate. Methods of measurement and supersonic wind tunnel testing.
Professor Wu

305-612B VISCOUS FLOW AND BOUNDARY LAYER THEORY Exact solutions of the Navier-Stokes equations. Laminar boundary layer equations. Separation methods of solution. Compressible laminar boundary layer. Significance of Prandtl number. Numerical methods of solution. Stability of laminar flow and the causes of transition to turbulence. Incompressible turbulent boundary layer. Momentum and energy equations. Scales of turbulence. Law of the wall, roughness and the prediction of skin friction. Prediction of the turbulent boundary using integral and field methods. Self-preserving turbulent flows including wakes and jets. Methods of measurement. Extension to compressible flow.
Professor Newman

305-614B NON-EQUILIBRIUM GAS DYNAMICS. Introduction to atomic and molecular structures and relation to radiation. Statistical thermodynamics and kinetic theory of real gas, partition functions, mixed gas, reacting gas, equilibrium theory, non-equilibrium theory. Collision theory, elastic and inelastic collisions, ionization, breakdown in gases, principle of detailed balancing. Interaction of radiation with matter, spectra, line broadenings, population inversions, lasers. Flow with vibrational and chemical non-equilibrium rate equations, relaxation processes nozzle flow.
Professors Guirao, Lee and Knystautas

305-615B UNSTEADY GASDYNAMICS I. Kinetic theory and conservation equations, shock detonation and deflagration wave structure and Hugoniot properties, acoustic theory and method of linearization, waves of finite amplitudes, wave interactions, Chester-Chisnell-Whitham theory, geometrical shock dynamics, weak shock theory of Chandrasekhar, Friedrichs and Whitham.
J.H.S. Lee.

* **305-616B AERODYNAMIC NOISE.** Aero-acoustic equations. Lighthill's theory of aerodynamic sound. Source, dipole and quadrupole radiation. Relevant concepts from random process theory. Curle's theory of the influence of solid boundaries. Theories of jet noise and propeller noise. Physical characteristics of the noise of jets, wakes, boundary layers, separated flow, propellers, fans, combustion and compressors. Techniques of noise suppression.
STAFF

305-617A UNSTEADY GASDYNAMICS II. Similarity methods in gasdynamics, blast wave theory, non-similar techniques of Sakurai and Oshima, integral methods in shock dynamics, the snowplow mode 1 for $\gamma \to 1$, asymmetrical shock propagation, asymptotic self-similar motions, implosion dynamics, blast scaling, far field effects and interaction with structures.
Professor Lee

305-621B ADVANCED MACHINING PROCESSES. (Prerequisite: 305-272A). Metal behaviour under cutting conditions. Machining accuracy of NC machine tools. Machinability concept and application. Some design considerations of cutting tools; optimization of tool shape. Recent developments in abrasive processes. Some theoretical and practical aspects of electro-discharge and electrochemical

machining. Lasers in manufacturing. Surface integrity in unconventional machining. System approach in manufacturing.
Professor Kops

305-623B MACHINE TOOL ENGINEERING. (Evening course). Common design features of machine tools. Elements of machine tools. Machine tools for production in large series: automatics, transfer machines and production, line technology, line balancing, group technology, numerically controlled machines and machining centers, design of N/C tooling systems, fixturing for N/C large machine tool system. Economic parameters.
Professor Cherna

305-624A APPLIED PROCESS CONTROL. (Evening course). Hardware and software aspects of real time computers in process control and related applications. Fundamental hardware. Digital and analogue transducers, actuators, filters, interfaces and processors. Fundamental software: Process assembler language and machine architecture, real time operating systems, process oriented subsystems, interrupts, drivers, service routines. (An application assignment is given).
Professor Zsombor-Murray and Mr. Vroomen

* **305-625B SYNTHESIS OF MECHANISMS.** Review of kinematics and dynamics of plane motion mechanisms. Kinematics of Space Mechanisms: First principles: Coordinates and displacement of a rigid body, instantaneous screws, velocity and acceleration of rigid bodies, inertia and its effects. Application: graphical and matrix methods of analysis. Synthesis of mechanisms: gross motion of mechanisms, synthesis for finite displacement, function generation and path generation, synthesis for kinematic parameters, synthesis for dynamic parameters, introduction to the synthesis of space mechanisms involving both graphical and analytical techniques.
Professor Ahmed

* **305-626B ADVANCED CONCEPTS OF ENGINEERING DESIGN. (Evening course).** The Morphology of the Engineering Design Process. Systems Engineering: Formulation of the problem system; complex systems under constraints; applications to products, equipments and socio-economic-technical systems. Models for the creative process. Algorithms for creative synthesis solution space, morphological analysis, separation of synthesis and analysis, value engineering, synectics, boundary shifting. Feasibility analysis in the technical, economic and use environments. Modelling for simulation and optimization; choice of computer programs for continuous and stochastic models. Decision making and resource allocation. Utility functions, decisions matrix, decision criteria and decision trees. Rational choice among alternative design strategies with probabilistic outcomes.
Staff

305-627B COMPUTER-AIDED MECHANICAL DESIGN. (Evening course). Computer graphics, automated draughting, function visualization. Interactive techniques and the engineering design process. Two — and three — dimensional curve fitting. Optimization, layout, and packaging problems. Stress and force analysis. Network and flow analysis. Project planning and scheduling techniques. The course is conducted on a seminar and informal lecture basis. Students will review topics on a broad basis but will concentrate on two topics, writing original programming in one of these.
Professor Pfeiffer

305-632A ADVANCED STRESS ANALYSIS FOR ENGINEERS. (Evening course). Review of small displacement theory of elasticity. Variational principles. Finite strains. The strain energy function and the principle of potential energy. Thermoelastic problems. Deformation and flow theory of plasticity. Response characteristics of viscoelastic meterials.
Professor J.W. Provan or Professor D.R. Axelrad

305-633B TRIBOLOGY. Friction; wear; solid lubrication, boundary lubrication; externally pressurized bearings; fluid film lubrication; rolling contact bearings; bearing selection and design; lubricant chemistry; films and loops.
Dr. Atack

305-640A GENERAL SYSTEMS THEORY. An introduction to mathematical modelling of general systems. Fundamental concepts of state variables and phase representations, geometry of phase portraits, singular points. Bifurcations stability and jump phenomena. Mechanisms of growth and decay, saturation time-lag cyclical fluctuation, feedback, hierachy and structure formation. Application of thermodynamic concepts in the modelling of systems. Examples and practice in the formulation of models of industrial and environmental systems involving social, economic, ecological and biological factors.
Professor Lee

305-641B DYNAMICS OF COMPLEX SYSTEMS. Formulation and analysis of non-deterministic, complex systems, non-linear rate equations with periodic and random coefficients. Hamiltonian formulations, concept of contraction and levels of macroscopic description ensemble representations. Macro-variables and macroscopic laws, system response to random inputs. Gaussian-Markov processes, functional space, correlations and power spectrum. Application of biosystems. Emphasis of the course is on the application of techniques to physical complex systems.
Professor Lee

305-642A MECHANICS OF ENGINEERING SYSTEMS. (Evening course). Variational methods in mechanics. Hamilton's principle and the equations of motion of engineering systems. Lagrangian formulations of discrete and contin-

uous systems. Hamiltonian dynamics, Routh's procedure. Canonical transformations and the Hamilton-Jacobi method. General methods of discretizing continuous systems. Dynamic behaviour of linear and non-linear systems. Phase-space representation. Liapunov's definition of stability. Response of engineering systems to deterministic inputs by classical methods (matrix method).
Professor Paidoussis

305-643B VIBRATIONS IN ENGINEERING SYSTEMS. (Evening course). Review of analysis of linear continuous systems by classical methods. Response to deterministic and random excitation. Discretization of continuous systems; receptance, transfer-matrix, finite element, Galerkin methods. General linear algebra methods for analysis of linear systems; classical, numerical, matric function techniques. Response of generalized systems (non-diagonal mass, stiffness and dissipation matrices) to deterministic and random loads. Application to selected mechanical, electrical and accoustical systems. Introduction to the analysis of nonlinear systems.
Professor Paidousis

305-644A NONLINEAR CONTROL SYSTEMS. Review of some attributes of nonlinear system dynamics. Phase-plane analysis of low-order nonlinear systems, singular points in the phase plane. Analysis of relay systems with the Tsypkin locus Sinusoidal-input describing functions, steady-state and transient oscillations in nonlinear systems, multiple-input describing functions and stabilization of nonlinear systems by means of high frequency dither signals. Random input describing functions. Applications of the second method of Liapunov to nonlinear control system design and stability analysis. Lure's theorem and Popov's method. Introduction to the analysis and design of control systems for distributed parameter processes.
Professor Hoffman

* **305-650A HEAT TRANSFER.** A study of more advanced topics in steady and transient heat flow by conduction, convection and radiation. New developments in heat transfer theory and techniques.
Professor Stachiewicz

305-651B DESIGN OF HEAT TRANSFER EQUIPMENT. (Evening course). The design of heat transfer equipment with special attention to the design of shell-and-tube heat exchangers, coolers, heaters, condensers; also, the design of air and gas heat exchangers for gas turbines. The main stress will be on the thermal aspects of the design but mechanical features will also be discussed.
Professor Stachiewicz

* **305-652B DYNAMICS OF COMBUSTION.** Summary of basic thermodynamics, statistical mechanics, fluid dynamics and chemical kinetics. Conservation equations for multicomponent reacting systems. Interface boundary conditions. Diffusion flames, droplet and particle combustion. Steady laminar pre-mixed gas flames. Mechanisms of flame propagation. Flammability limits. Flame quenching. Non-steady phenomena in flames. Cellular structure. Steady and non-steady turbulent flames. Spray combustion. Detonative combustion. One-dimensional steady detonation waves. Initiation of detonation. Detonational instability and structure.
Professors Knystautas and Lee

305-700A, B, C DOCTORAL PRELIMINARY EXAMINATION.
Staff

305-722A, B SELECTED TOPICS IN MACHINING PROCESSES. Prerequisite: 305-572A. A study of more advanced topics in metal cutting, abrasive processes and unconventional methods of machining. New trends and developments in material removal theory and techniques.
Professor Kops

305-734A MICROMECHANICS I. (Prerequisites: 305-543A and 305-535B; Corequisite: 305-502A). Probabilistic concepts in Micromechanics. Stochastic functions and random processes. Statistical mechanics of structured solids. Microstates and the Master equation of structural solids.
Professor Axelrad

305-735B MICROMECHANICS II. (Prerequisite: 305-734A. Corequisite: 305-503B) Probabilistic deformation theory of structured solids. Review of deterministic kinematics. Models of structured solids. The Markovian approximation to the deformation process. Probabilistic constitutive theory and the material functional. Applications to polycrystalline solids and fibrous networks.
Professor Axelrad

305-745A ADVANCED DYNAMICS OF ENGINEERING SYSTEMS. State vector analysis of engineering systems. Liapunov's stability analysis and application to stationary linear systems. General dynamic and Eulerian stability methods for linear distributed parameter systems. Selected topics in ono-linear mechanics. Methods of analysis of non-linear systems. Introduction to aeroelastic phenomena and discussion of selected topics in aerohydroelasticity.
Professor Paidoussis

E14 DEPARTMENT OF METEOROLOGY

STAFF

Professors — SVENN ORVIG *(Chairman)*; W.F. HITSCHFELD; J.S. MARSHALL; R.R. ROGERS
Associate Professors — J. F. DEROME; P. E. MERILEES; E. VOWINCKEL

Assistant Professor — H.G. LEIGHTON
Special Lecturer — R. W. DALEY
Research Associates — C. WARNER; D. HARTMANN

REQUIREMENTS

M.Sc. candidates may enter with a bachelor's degree with honours in Physics or Mathematics and Physics, or a bachelor's degree in Engineering Physics, but in any case only with standing acceptable to the Department. The program then consists of courses 195-651D to 195-656D, and culminates in research towards a thesis. Research is normally started after the spring examinations of the first session; it can be completed by the autumn, but typically will require a full year, till the end of the second session. Candidates entering with a bachelor's degree with honours in Meteorology can replace some of these courses by instruction in seminar, and can commence their research without delay. Candidates with some postgraduate training or experience in Meteorology may receive credit for this.

Students with a Master's degree in meteorology or equivalent qualification, again with standing acceptable to the Department, may register for the Ph.D. degree. The ordinary requirements concerning thesis and preliminary examination will apply. The work consists principally of research with one of McGill's research groups, active in dynamic and synoptic meteorology and climatology, and the Stormy Weather Group in physical meteorology, especially precipitation physics. The candidate will be required to attend research seminars and to take a small number of courses, in this or other departments, as appropriate.

COURSES FOR HIGHER DEGREES

195-651D PHYSICAL METEOROLOGY. (2 hours; *Texts* — Mason, *Physics of clouds:* Oxford; Kondratyev, *Radiative heat exchange in the atmosphere:* Pergamon). Thermodynamics of the atmosphere. Instability and convection. Cloud physics and storm structure. Radar applications. Solar and terrestrial radiation. Radiation calculations and diagrams. Energy budget of the atmosphere.
Professors Rogers, Leighton and Hitschfeld

195-652D DYNAMIC AND NUMERICAL METEOROLOGY. (2 hours; *Texts* — Haltiner, *Numerical Weather Prediction:* Wiley; Holton, *An Introduction to Dynamic Meteorology;* Academic Press). The equations of motion. Circulation and vorticity, development theorems. Linear perturbations, instability. Mathematical models of the atmosphere; application of difference equations and their numerical solution.
Professors Derome, Merilees and Dr. Daley

195-653D CLIMATOLOGY. (1 hour; *Texts* — Sellers. *Physical Climatology:* Un. of Chicago; Critchfield, General Climatology: Prentice-Hall). The general circulation of the atmosphere and the ocean. Climatic classification. The heat and water balance, climatic change.
Professor Orvig

195-654D SYNOPTIC METEOROLOGY. (4 hours). A laboratory course to complement Meteorology 195-651D to 195-653D. Analysis of weather charts and diagrams, forecast techniques, diagnostic treatment of atmospheric dynamics and weather processes. Modern statistical and computer methods are used wherever suitable.
Professor Vowinckel and Staff

195-655D SEMINARS "TOPICS IN METEOROLOGY". (1 hour). One-hour discussions on special topics in meteorology, e.g. lightning studies, meteorology and microwave communications, remote sensing, limits of predictability.
Staff

195-656D DAILY WEATHER DISCUSSION. (2½ hours). One-half hour briefing on the current weather situation.
Professor Vowinckel

195-700D Ph.D. COMPREHENSIVE. (Cognate Subjects).

195-701D Ph.D. COMPREHENSIVE. (General).

195-751D SEMINAR IN PHYSICAL METEOROLOGY. (2 hours). A research seminar in topics in atmosphere physics.
Professors Marshall and Rogers

195-752D SEMINAR IN DYNAMIC METEOROLOGY. (2 hours). A research seminar on theoretical and numerical aspects of current general-circulation studies.
Professors Derome and Merilees

195-753D SEMINAR IN CLIMATOLOGY. (2 hours). A research seminar in topics from synoptic and physical climatology.
Professors Orvig and Vowinckel

E15 DEPARTMENT OF MINING AND METALLURGICAL ENGINEERING

STAFF

Professors — W.M. WILLIAMS *(Chairman);* W.G. DAVENPORT; J. J. JONAS; T. SALMAN; W. M. TELFORD
Associate Professors — J. E. GRUZLESKI; R.I.L. GUTHRIE; O.G. JENSEN; B.W. MACKENZIE; R.R. MacLACHLAN; G.W. SMITH; W.T. THOMPSON; J.E. UDD
Assistant Professors — P.A. DISTIN; O.T. DJAMGOUZ; J.A. FINCH

Lecturers — M. BILODEAU; M. FIRTH; D. TROTTER
Sessional Lecturers — R.S. BOIRE; J.-P. DROLET; T.E. HAWKINS

Graduate programs leading to the M.Eng., M.Sc. and Ph.D. degrees are available for research in Rock Mechanics, Mining Environments, Mineral Economics, Materials Handling, Applied Geophysics, Electrochemistry, Chemical and Process Metallurgy, Mineral Dressing and related Surface Chemistry, Physical and Mechanical Metallurgy. Course programs leading to the M.Eng. (Mining) degree and the Diploma in Mining Engineering are also available.

Special programs are available for those holding degrees in subjects other than Metallurgy or Mining, e.g. Chemistry, Physics, Engineering, Geology, etc.

REQUIREMENTS

M.Eng. and M.Sc. Degrees

The M.Eng. degree is open to graduates holding the B.Eng. degree or its equivalent in Metallurgical Engineering, Mining Engineering, Geophysics or related fields. The M.Sc. degree is open to graduates holding the B.Sc. degree or its equivalent in Metallurgy, Geophysics, Geology or related fields. In both cases, at least a high second class standing at the undergraduate level is required.

A candidate must pass courses assigned by the Department. These will be selected from courses offered by the Department and cognate courses given by other departments. The selection will be based upon a consideration of the student's previous training and research interests.

A candidate will be required to participate in an appropriate Research Seminar course.

A candidate must submit an acceptable thesis based upon research successfully completed by the candidate.

Graduate Diploma in Mining Engineering

This Diploma is open to graduates of suitable standing in any branch of engineering or applied science. The Department provides a course of study during the academic year: this is normally followed by five months of approved experience within the mining industry. Candidates will be required to take an integrated group of courses, selected in consultation with the Department and bearing in mind their previous academic training.

M.Eng. (Mining) Degree

The first year of the program involves four months approved experience within the mining industry, followed by eight months of academic study at McGill University. The academic program has been designed to advance diversely-trained graduates to a uniform level of postgraduate academic proficiency within the Mining Engineering discipline and to provide them with the important concepts and analytical techniques necessary for a more problem-oriented second year. The second year provides a sequence of advanced courses, detailed below, together with a dissertation which is handled as an individual research project throughout the academic year. The course work is supplemented by a second four month period of approved experience within the mining industry.

Applicants with a degree in Mining Engineering will be considered for admission to a twelve month program leading to the same degree.

The courses required in the second year are:

306-602D HUMAN RELATIONS IN THE MINERAL INDUSTRY

306-604D MANAGEMENT-LABOUR RELATIONS

306-622D MINING ENVIRONMENTS

306-623D GROUND CONTROL AND FRAGMENTATION

306-624D MATERIALS HANDLING IN MINES

306-625D MINERAL INDUSTRY ECONOMICS

306-628D DISSERTATION

Ph.D. Degree

A candidate for this degree must normally hold an acceptable Master's degree in Metallurgy, Metallurgical Engineering, Mining Engineering, Geophysics, or a related field. The Ph.D. degree will be awarded in the appropriate field.

A candidate must pass courses assigned by the Department. These will be selected on the basis of the student's previous training and research interests.

A candidate will be required to participate in an appropriate Research Seminar course.

Candidates are expected to take a preliminary examination within the first year of their Ph.D. registration.

A candidate must submit an acceptable thesis based upon research successfully completed by the candidate and must satisfy the examiners in an oral examination on the thesis and related topics.

A candidate must also satisfy general faculty regulations relating to Ph.D. degrees.

COURSES FOR HIGHER DEGREES

The courses in this department have been renumbered to conform with the following classification system. The first three numbers (i.e. 306) are the department code. The next digit is the level of instruction. The last two digits are classified as follows:

01 to 29	**general mining courses.**
30 to 39	**geophysics courses.**
40 to 49	**mineral processing courses.**
50 to 59	**extractive and process metallurgy courses.**
60 to 69	**physical metallurgy courses.**
70 to 79	**seminars.**

Graduate Courses Offered by the Department

306-602D HUMAN RELATIONS IN THE MINERAL INDUSTRY. (80-84 hours).

(A) ORGANIZATIONAL HUMAN BEHAVIOUR. A general study of the interrelationships of human, social, technical and organizational forces which underlie actions and procedures of people at work.

(B) MINING ORGANIZATIONAL PROBLEMS. Organizational structures: performance assessments; procedures re employee selection, promotion, communication, operational problems; principles of job control and job training; inter-personal relationships.
Mr. Hawkins

* **306-604D MANAGEMENT-LABOUR RELATIONS.** (80-84 hours). History and character of Canadian and U.S. labour movements; problems of labour relations under collective bargaining processes; management-union relationships; public policy; critical national negotiations.
Mr. Hawkins

306-606D MINERAL/METAL PRODUCTION. (80-84 hours).

* **306-608D THE MARKETING OF MINERAL PRODUCTS.** (80-84 hours).

306-620A ROCK MECHANICS I. (2 hours). A study of the effects of rock properties and ground stresses on problems of mine design.
Professor Udd

306-621B ROCK MECHANICS II. (2 hours, alternate weeks, 3 hours laboratory). The application of the principles of strength of materials to the analysis of problems of ground control.
Professor Udd

306-622D MINING ENVIRONMENTS. (80-84 hours). Hygienic aspects of the mining environment; radiation hazards and control; noise, airborne contaminants and ventilation; design principles for dust control and air conditioning systems; fan theory and application; illumination theory and design; control of noise and vibrations.
Professor Maclachlan

306-623D GROUND CONTROL AND FRAGMENTATION. (80-84 hours). Geo-mechanics, soil and rock mechanics applied to mining operations and mine design; theory of models; deformation, flow and behaviour of fragmented geologic materials; the properties and behaviour of compacted hydraulic/pneumatic slope fill.
Professor Udd

306-624D MATERIALS HANDLING IN MINES. (80-84 hours). Capital investment, economic analysis and design of all currently feasible materials handling systems for open pit and underground mines; bin design, slurry pipe lines, stock piling, port facilities and water transportation; equipment replacement and decision making; compressed air technology in mining. Emphasis is on criteria for selection and case study seminars and the influence of selected systems — upon mine design and layout.
Professor Djamgouz

* **306-625D MINERAL INDUSTRY ECONOMICS.** (80-84 hours). The course covers a broad range of decision-making problems in the mineral industry, including the mine development decision, economic problems confronting the mining company — corporate planning, exploration strategy, mine finance and mineral market forecasting — and mineral policy problems (such as taxation and regional development).
Professor Mackenzie

306-626D ANALYSIS OF QUANTITATIVE DATA. (80-84 hours).

306-627D MINERAL INDUSTRY DECISION-MAKING. (80-84 hours).

306-628D DISSERTATION. (80-84 hours). A comprehensive study of mineral technology or economics applied to specific minerals industry cases.
Staff

306-630D INTERPRETATIVE METHODS IN APPLIED GEOPHYSICS. Analysis of geophysical data in seismic, magnetic, gravity and electrical prospecting.
Professor Telford

* **306-640D ADVANCED MINERAL PROCESSING.** (80-84 hours per session). Modern advances in mineral processing techniques.
Professor Finch

306-641D MINERAL DRESSING AND MILL DESIGN. (2 hours). Physical and chemical treatments for the recovery of valuable minerals in ore. The application of techniques embodying gravity concentration, electrostatic and magnetic separations, and flotation with emphasis on mill design.
Professor Salman

306-642D MINERAL DRESSING. (2 hours). Mineral separations and recoveries by flotation. Studies of sorption processes and surface reactions.
Professor Salman

306-650D TRANSPORT PHENOMENA IN PROCESS ENGINEERING METALLURGY. (2 hours). Theoretical studies of selected processes for the smelting and refining of metals. Metallurgical applications of heat, mass and momentum transfer theories.
Professors Davenport and Guthrie

306-651D TOPICS IN CHEMICAL METALLURGY. (2 hours). Applications of physical chemistry to extractive metallurgy with emphasis on thermodynamics and electrochemistry; recent developments in extractive metallurgical research.
Professor Thompson

306-653A, B TRANSPORT PHENOMENA IN PROCESS METALLURGY. Process metallurgical applications of heat, mass and momentum transport theories. Methods of numerical solution in the analysis of: continuous casting, ingot solidification, soaking pits, hot mill operations, alloy addition methods in steel-making, etc. Students are assigned individual computer projects and present a report plus seminar on their findings.
Professor Guthrie

306-655A, B ADVANCED METALLURGICAL PROCESS ANALYSIS. Metal extraction processes are analysed from the standpoints of metals recovery, raw materials usage and energy requirements. Techniques which can be used to minimize energy consumption are examined in detail. Optimization models are developed. Students examine and report on the metallurgical and economic feasibility of recently developed processes.
Professor Davenport

306-660D APPLIED X-RAYS. (4 hours). X-Ray diffraction methods and their application to chemical analysis, alloying, grain size determination, preferred orientations, deformation, annealing and single crystal studies; fluorescence analysis; introduction to radiography and micro-radiography; electron probe micro-analysis.
Professor Smith

306-661B ADVANCED METALLURGICAL DESIGN. (3 hours). A discussion and laboratory course, supplemented by detailed written reports, dealing with metallurgical design problems. Special attention will be given to problems in corrosion, weld design, casting, prevention of metal fatigue, heat effects and materials selection.
Professor Williams

306-662B CRYSTAL GROWTH AND SOLIDIFICATION OF METALS. (3 hours). The kinetics of freezing and the structure of the solid-liquid interface. Methods of single crystal growth; growth imperfections in single crystals. Dendritic freezing in pure materials. Alloy freezing and the redistribution of solute; morphological stability during freezing, Eutectic freezing with particular reference to cast irons.
Professor Gruzleski

306-663A DEFECT STRUCTURE AND MECHANICAL PROPERTIES OF METALS. (3 hours). Elastic compliances and rigidities; stress and strain deviators; yield criteria; vacancies and diffusion; topology of dislocations and stacking faults; self-energy of dislocations; dislocation interactions with point, line and surface defects; plastic deformation of single crystals and poly-crystals; work hardening and recovery processes.
Professor Jonas

306-664B THERMAL AND ATHERMAL DEFORMATION PROCESSES. (3 hours). Empirical approaches to experimental results; elementary rate theory; introduction to activation free energies, enthalpies and entropies; physical significance of activation areas and volumes; experimental determination of activation parameters; rate theory applied to high temperature deformation; periodic internal stress models; rate theory applied to low temperature deformation; athermal deformation processes.
Professor Jonas

306-670D RESEARCH SEMINAR for students registered for a Master's degree in Metallurgy.
Staff

306-672D ROCK MECHANICS AND GEOPHYSICS SEMINAR. Selected topics in Rock Mechanics and Geophysics will be presented by students and staff members.
Staff

306-673D MINING ENGINEERING SEMINAR. For students registered in the Diploma or M.Eng. (Mining) program.
Staff

306-674D EARTH PHYSICS SEMINAR. Students and staff members will present selected and current topics under the following general headings; cosmology; seismology; earth's gravity, magnetic and electric fields; thermal history; tectonophysics; celestial mechanics.
Geophysics Staff

306-675D APPLIED GEOPHYSICS SEMINAR. Case histories in petroleum and mineral exploration; well-logging methods; geophysical methods applied particularly to mining and civil engineering problems. (Course given in collaboration with Ecole Polytechnique.)
Geophysics Staff

306-765D TOPICS IN ADVANCED PHYSICAL METALLURGY. (2 hours). Topics selected from recent research in physical metallurgy.
Staff

306-766A, B STRENGTHENING AND FRACTURE OF METALS. (3 hours). Strengthening mechanisms in metals: superalloy and order hardening, solute, precipitate, and dispersion hardening, grain boundary and sub-boundary hardening; theories of lattice friction; discontinuous yielding and dynamic strain aging; grain boundary sliding, dynamic recrystallization and superplasticity; mechanisms of ductile and brittle fracture.
Professor Jonas

306-771D RESEARCH SEMINAR for students registered in a Ph.D. program in Metallurgy.
Staff

306-776D MINING RESEARCH SEMINAR. For students registered in a Ph.D. program.
STAFF

Undergraduate Courses

The following undergraduate courses are available to graduate students who have not taken an equivalent course.

306-230B GEOPHYSICAL EXPLORATION
Professor Jensen

306-321B BEHAVIOUR OF ROCK STRUCTURES
Professor Udd

306-325A MATHEMATICAL APPLICATIONS IN THE MINERAL INDUSTRY
Mr. Bilodeau

306-326B MATHEMATICAL APPLICATIONS IN THE MINERAL INDUSTRY II
Professor Mackenzie

306-327A MATERIALS HANDLING
Professor Djamgouz

306-328B MINE ENVIRONMENTS
Professor Djamgouz

306-332B MATHEMATICAL APPLICATIONS IN GEOPHYSICS
Professor Jensen

306-334B POTENTIAL THEORY IN GEOPHYSICS
Professor Jensen

306-420A MINING FEASIBILITY STUDIES I
Professor Djamgouz and Staff

306-421B MINING FEASIBILITY STUDIES II
Professor Djamgouz and Staff

306-422A APPLIED EXPLOSIVES
Professor MacLachlan

306-423A MINERAL INDUSTRY ECONOMICS I
Mr. Boire

306-424B MINERAL INDUSTRY ECONOMICS II
Professor MacKenzie and Mr. Drolet

306-431A ADVANCED EXPLORATION GEOPHYSICS I
Professor Telford

306-433B ADVANCED EXPLORATION GEOPHYSICS II
Professor Telford

306-435A ADVANCED EXPLORATION GEOPHYSICS III
Professor Jensen

306-436B ADVANCED EXPLORATION GEOPHYSICS IV
Professor Telford

E16 DEPARTMENT OF PHYSICS

STAFF

Professors — C-S LAM; *(Chairman);* R.E. BELL; A. CONTOGOURIS; G.W. FARNELL; F.T. HEDGCOCK; W.F. HITSCHFELD; M.P. LANGLEBEN; B. MARGOLIS; S-K MARK; J.S. MARSHALL; W.M. MARTIN; *(Assistant Chairman);* E.R. POUNDER; J.M. ROBSON *(on leave)* R.T. SHARP; D.G. STAIRS; E.J. STANSBURY; D.R. STEVENSON; P.R. WALLACE

Associate Professors — J.R. ADDISON; G.L. AUSTIN; J.E. CRAWFORD; S. DAS GUPTA; N.B. de TAKACSY; R. HARRIS; R. HENZI; J.E. KITCHING; J. K-P LEE; J.F. MATHISON; R.B. MOORE; T.F. MORRIS; W.B. MUIR; P.M. PATEL; D.G. RYAN; J.O. STROM-OLSEN; J.M. TRISCHUK; D. WALSH; M. ZUCKERMANN

Assistant Professor — M.M. SHAPIRO

Visiting Associate Professor — A.I. McPHERSON

FIELDS OF RESEARCH

High-Energy Physics

Theoretical: The interests of the McGill high energy theoreticians range from studies of the properties of elementary particles, considerations of the physics of elementary particle reactions, to quantum field theory and applications of group theory. A special feature of some of the work is the close association with nuclear physics both as an aid to understanding particles and also in the use of high energy reactions to further our knowledge of the properties of nuclei.

Experimental: Experiments at the highest available energies are carried out at the Fermi National Accelerator Laboratory. The program is primarily concerned with strong interaction physics. Present activities utilize both counter and bubble chamber techniques and include elastic scattering experiments at large momentum transfer, inclusive reaction studies and properties of neutral mesons.

Ice Physics

Interest centres on ice dynamics-response of floating ice to wind, current and tide-and electrical properties of sea ice. Field experiments in the Gulf of St. Lawrence are in progress. The group is actively involved in an international ccoperative experiment in the Beaufort Sea, called AIDJEX. The experiment includes use of satellites and remote sensing aircraft, as well as "ground" observations of standard oceanographic and meteorological parameters.

Nuclear Physics

Theoretical: Problems in nuclear spectroscopy of medium nuclei, collision theory, pion induced reactions and applications of statistical mechanics in nuclear physics are currently being studied.

Experimental (Foster Radiation Laboratory Group): The research program centres around a 100 MeV proton synchrocyclotron and a data handling system based on PDP-8 and PDP-15 computers. Current main activities involve studies of the short-lived nuclei lying far from the region of beta stability, using high speed "rabbit" systems, an on-line mass spectrometer and a superconducting beta ray spectrometer. The laboratory is also engaged in applied nuclear physics research of bio-medical, environmental, and archeological interests.

Experimental (Neutron physics): The experimental program is aimed at isolating a beam of neutrons whose velocity is only a few metres per second. The source of neutrons is a high flux nuclear reactor at the Chalk River Nuclear Laboratories and the very slow neutrons are isolated by their special properties of total reflection. They will be used for experiments on the fundamental properties of neutrons, including their radioactive decay and their interaction with the gravitational field.

Solid-State Physics

Theoretical: Programs of research are in progress on the properties of semiconductors and semimetals in intense magnetic fields, including two-dimensional systems; in dilute alloys, amorphous metals, including magnetic systems, "spinglasses" and layer compounds.

Experimental: The principal lines of research are in the spectroscopy of magnetic insulating crystals, including Jahn-Teller effects, and on the magnetic and transport properties of various materials-amorphous and crystalline — ranging from semiconductors to metallic single crystals. Additional cryogenic facilities and magnets providing high magnetic fields are available at a McGill University laboratory.

Stormy-Weather Group

This group uses the McGill Radar Weather Observatory at Ste. Anne de Bellevue which is equipped with a weather radar of outstanding capability. It records stormy weather in all seasons, supplemented in summer by three radio-direction-finding stations for lightning and three wide-angle-camera stations for stereoscopic cloud photography. There is also a program of cloud-temperature measurement by radiometric photography.

ADMISSION

M.Sc.

Normal requirement is a B.Sc. in Physics, or equivalent, with high standing.

Ph.D.

Normal requirement is a M.Sc. in Physics, or equivalent. Candidates in good standing may have the option of transfering into this program from the M.Sc. program after one year.

REQUIREMENTS

M.Sc.

Candidates must successfully complete 5 one-semester courses and a M.Sc. thesis, in addition to all the other normal requirements of the Graduate Faculty.

Ph.D.

Candidates must successfully complete a Preliminary Examination and submit a Ph.D. thesis, in addition to all the normal requirements of the Graduate Faculty.

Financial Assistance

Financial assistance is available to students in the form of Teaching and Research Assistantships.

Further Information

A brochure regarding graduate studies in physics is available on request. The brochure includes a detailed description of the research activities in the department, application forms for admission to graduate studies and information concerning requirements for the M.Sc. and Ph.D. degrees and financial support. Inquiries should be addressed to the Chairman.

ADVANCED UNDERGRADUATE AND GRADUATE COURSES

198-514B GENERAL RELATIVITY. (3 hours). Transition from special to general relativity. Non-Euclidian geometry. The basic laws of physics in covariant form. Einstein's equations. Newton's theory of gravitation as an approximation. Propagation of gravitation. Rigorous solutions of the field equations. Cosmology.
Professor Henzi

198-551A QUANTUM THEORY. (3 hours). General formulation, scattering theory, WKBJ approximation, time-dependent perturbation theory and applications, angular momentum, relativistic wave equations.
Professor Contogouris

198-552D ELECTROMAGNETIC THEORY. (3 hours). Electrostatics, boundary value problems, magnetostatics. Maxwell's equations. Wave equations, waveguides, radiation, multipoles and vector spherical harmonics.
Professor Crawford

198-557A NUCLEAR PHYSICS. (3 hours). General nuclear properties, nucleon-nucleon interaction and scattering theory, radioactivity, nuclear models, nuclear reactions.
Professor Robson

198-558A SOLID STATE PHYSICS. (3 hours). Properties of crystals, lattice vibrations and thermal properties of insulators, free electron model and

band structure, semiconductors, metals, optical properties.
Professor Harris; Dr. Cochrane

198-567B PARTICLE PHYSICS. (3 hours). Basic interactions and symmetries, kinematics, scattering theory, phase space, symmetry and statistics, boson and baryon spectra, experimental techniques.
Professor Stairs

198-602D BASIC PHYSICS FOR HIGH SCHOOL TEACHERS. A *full course for M.Ed. students only.* This course covers the basic principles of Classical Physics stressing those actively taught in high schools. The level is such as to stimulate a clear understanding of the implications of these principles in Modern Physics. The physical principles involved in many everyday phenomena will be explored in some depth. Formal topics include mechanics, Thermal Physics, Waves, Optics and Electromagnetism. Prerequisite: CEGEP-level course in Calculus or equivalent and teaching experience in Physics.

198-603C PHYSICAL MEASUREMENT. A *full course for M.Ed. students only.* This will be basically a laboratory course interspersed with lectures and seminars. Experimental techniques, instrumentation and data analysis will be stressed in the development and carrying out of experiments specifically oriented towards a High School Program. This will include experiments where the result is unknown to the experimenter. (Prerequisite: 198-602D).

198-604D MODERN PHYSICS. A *full course for M.Ed. students only.* The aim of this course is to enable the student to understand the concepts leading to modern physics as well as some of the more spectacular recent developments. Topics include Atomic and Nuclear Physics, Solid State Physics, Modern Optics and Astrophysics. (Prerequisite: 198-602D).
Professor Mathison

198-610B ADVANCED QUANTUM MECHANICS. (3 hours). Basic theory of Quantum Mechanics; treatment of special topics: theory of angular momentum, perturbation theory, scattering-theory, many-body problems; the Dirac Theory; quantization of the electromagnetic field.
Professor Margolis

198-612A ADVANCED MATHEMATICAL PHYSICS. (3 hours). Selected topics from differential equations, Green's functions and integral equations; applications to physics.

198-613B ADVANCED MATHEMATICAL PHYSICS. (3 hours). Group representation theory with application to physics.

198-616A CLOUD PHYSICS. (3 hours). Introduction to cloud physics.
Professor Marshall

198-617B ICE PHYSICS. (3 hours). Acoustical, electrical, mechanical and thermal properties of sea ice and fresh-water ice, energy exchange in the atmosphere-ice-ocean system; ice movement.
Professors Pounder and Langleben

198-618B SOLID STATE PHYSICS. (3 hours). Lattices and their excitations; the theory and properties of normal and superconduction metals, semiconductors and their applications; magnetism.
Professor Ström-Olsen

198-700D PRELIMINARY Ph.D. EXAMINATION.

198-710D QUANTUM FIELD THEORY. (3 hours). The content of the course includes discussions on relativistic single particle wave functions, quantized fields and their symmetry properties, perturbation theory and applications, as well as the use of analytic properties of relativistic quantum fields.
Professor Lam

* **198-712D MANY-BODY PROBLEMS.** (3 hours). Modern topics in many-body problems, including field-theoretical methods; applications to electron-electron and electron-phonon interactions in solids; plasmons; special topics in magnetism, superconductivity and superfluidity.

* **198-714D EXPERIMENTAL SOLID STATE PHYSICS.** (3 hours). Topics, reflecting the interests of the students and the faculty involved, will be selected from the following experimental research areas: experimental low temperature solid state physics techniques; magnetism; electron transport phenomena; fermiology, propagation of electromagnetic waves in solids including resonance effects; semiconductors; superconductivity; electronic structure of alloys; properties of insulators.
Professors Hedgcock and Walsh

* **198-716D THEORETICAL SOLID STATE PHYSICS.** (2 hours). Second quantization; Wick's theorem; Thermodynamic Green's functions; Feynman diagrams. Superconductivity: experimental introduction; phenomenological theories, Landau-Grinsburg theory; pure superconductors and superconducting alloys; Magnetism: Hubbard's model for narrow band transition metals, ferromagnetism and antiferromagnetism in itinerant electron systems; Fedder-Martin model for Chromium; Green's function formulation of response theory; application to theory of spin waves in magnetic metals.
Professor Wallace

198-718A SPECIAL TOPICS IN SOLID STATE PHYSICS. (3 hours). Specialized discussion of current problems in solid state physics.

198-720D EXPERIMENTAL NUCLEAR PHYSICS. (3 hours). The course covers the fundamentals of experimentation in nuclear physics; properties of nuclear states; nuclear reactions; electromagnetic and beta decays; and the application of current theories to experimental results.
Professor Mark

198-723A THEORETICAL NUCLEAR PHYSICS I. (3 hours). Scattering Theory, Reaction Theory.
Professor Das Gupta

198-724B THEORETICAL NUCLEAR PHYSICS II. (3 hours). Nuclear Structure, beta-decay, gamma-radiation.
Professor de Takacsy

* **198-726D EXPERIMENTAL HIGH ENERGY PHYSICS.** (3 hours). High energy linear and circular accelerators — detailed design considerations in the NAL 500 GeV proton accelerator, the SLAC 20 GeV electron linear accelerator and CERN Intersecting Storage Rings, future prospects; beam design; high energy detectors — scintillation counters; spark chambers, bubble chambers and new proposals; kinematics; particle classification; spin and partly determination; discrete symmetries; internal symmetries; high energy two-body reactions; multiparticle production; Quark model.

* **198-728D THEORETICAL HIGH ENERGY PHYSICS.** (3 hours). Theory and phenomenology of strong, electromagnetic and weak interactions; particle classification schemes, high energy reactions, including Regge theory and dispersion relations; electromagnetic form factors and weak interaction decay phenomena.

198-730A SPECIAL TOPICS IN HIGH ENERGY PHYSICS I. (3 hours). Specialized discussion of some current problems in theoretical particle physics.
Professor Margolis

198-731B SPECIAL TOPICS IN HIGH ENERGY PHYSICS II. (3 hours). Specialized discussion of some current problems in particle physics.
Professor Stairs

* **198-740D ADVANCED ASTROPHYSICS.** (3 hours). A survey of modern theories including stellar atmospheres, energy sources, stellar structure and evolution; magnetohydrodynamics.

198-799D SEMINARS. Each of the research groups in High Energy Physics, Ice Physics, Nuclear Physics, Solid State Physics and Stormy Weather Physics organises research seminars to be presented by students, staff and visitors. Ph.D. candidates are required to attend and participate in the seminars organized in their field of specialisation.

E17 URBAN PLANNING PROGRAM

STAFF

Professor — DAVID FARLEY *(Director)*
Associate Professor — BRYAN H. MASSAM; JEANNE M. WOLFE
Visiting Professor — BLANCHE LEMCO VAN GINKEL
Lecturers — MORRIS CHARNEY; JANE M. GLENN; LLOYD SANKEY; IAN SKELTON

The objective of the Urban Planning Program is to produce qualified professional urban planners, for both the public and private sectors. Students are expected on completion of the program to have acquired basic planning skills, a broad view of urban studies and a field of specialization. To achieve these objectives the teaching and research activities within the program are organized within the context of the broader urban studies and research effort at McGill.

REQUIREMENTS FOR THE M.U.P. DEGREE

The M.U.P. degree is open to students holding a bachelor's degree or equivalent in Anthropology, Architecture, Economics, Civil Engineering, Geography, Law, Management, Political Science, Social Work, or Sociology, with adequate knowledge of quantitative techniques.

The program in Urban Planning requires a *minimum* of two years, including a basic core of required studies and a selection of courses from a group of recommended electives. It emphasizes sponsored research to be carried out by staff and students and the development of a particular area of expertise for each student based on his background.

A three month internship with a member of a recognized planning association is required.

N.B. Deadline for applications is March 15.

COURSES

Group A — Core Knowledge (All required/no substitution)

409-610A/B MAN AND HIS ENVIRONMENT I

409-611A/B MAN AND HIS ENVIRONMENT II

409-612B THEORY OF PLANNING

409-613A/B APPLIED QUANTITATIVE TECHNIQUES

409-603D PLANNING PROJECTS I

409-604A PLANNING PROJECTS II

409-606B SUPERVISED RESEARCH SEMINAR

409-602D SUPERVISED RESEARCH PROJECT

Internship (Minimum three months).

In addition to courses in Group A, students are required to complete seven half courses, a minimum of four from Group B (highly recommended electives).

Group B — Development and Refinement (A minimum of 4 half courses required).

301-205A HISTORY OF HOUSING

301-621B HOUSING THEORY

483-145B LAW (PROPERTY IVA — LAND USE PLANNING)

303-640A TRANSPORTATION ENGINEERING I (URBAN TRANSPORTATION PLANNING)

303-641B TRANSPORTATION ENGINEERING II (TRANSPORTATION SYSTEMS ANALYSIS)

409-607D READING COURSE — URBAN PLANNING

301-232A STRUCTURE OF CITIES

154-468A URBAN AND REGIONAL ECONOMICS

301-431A CIVIC DESIGN

Group C — Specialization (A minimum of three half courses required. May include courses selected from Group B.)

407-637A HOUSING POLICY

407-625A COMMUNITY ORGANIZATION

151-321B URBAN ANTHROPOLOGY

166-222B URBAN SOCIOLOGY

183-412B ADVANCED URBAN GEOGRAPHY

154-425D ECONOMICS OF ECOLOGY

McGill University

Faculty of Graduate Studies and Research 1976 — 77

Section "F"

Social Sciences Allied Sciences

NOTE: Courses marked with an asterisk (*) are not offered in 1976-77. The letters, which form part of course numbers, have the following significance:
A — Fall term course
B — Winter term course
L — Summer session — part I
C — Summer session — part II
D — Full session course (Fall and Winter terms)

The official McGill University mailing address is:
McGill University, P.O. Box 6070, Station A
Montreal, Quebec, Canada H3C 3G1

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F1 DEPARTMENT OF ANTHROPOLOGY

STAFF

Professors — PETER C.W. GUTKIND; RICHARD F. SALISBURY; BRUCE G. TRIGGER *(on leave 1976-77).*

Associate Professors — DAN R. ARONSON *(on leave 1976-77);* FUMIKO IKAWA-SMITH *(Chairman);* PHILIP C. SALZMAN

Assistant Professors — DON W. ATTWOOD; MICHAEL S. BISSON; HARVEY FEIT; CARMEN LAMBERT; JEROME ROUSSEAU,

PROGRAMS

The department offers training leading to the M.A. and Ph.D. in Anthropology. Admission is to the M.A. program, except when a student already holds a Master's degree. It is expected, however, that most applicants will be oriented towards achievement of the Ph.D.

The M.A. degree evidences the candidate's ability to conduct a research study, and his/her intensive knowledge of a range of major fields within the discipline. The Ph.D. degree evidences the candidate's original contribution in specialist fields. The degree requirements aim at allowing an early development of individual interests within anthropology while stimulating quick progress.

The ideal time for completion of the M.A. should be of approximately 20 months, the first year being devoted to the completion of the work on the main fields and of a research proposal, the summer to gathering research data and the following year to writing a thesis, together with some consideration of the Ph.D. project. An ideal time for Ph.D. completion involves roughly a year of preparation for a research study. After passing an examination on their fields of specialisation and on the adequacy of their research proposal, the candidates spend roughly a year in data collection and another year as a minimum in analysing and writing up the research.

In our graduate program, the student-advisor relationship is central. At the start of the year, the incoming graduate students will each choose an adviser with whom they will work out at least the broad outlines and general timetable for the completion of their requirements.

Prospective students should write for full descriptive materials and applications *directly to the Graduate Secretary of the Department.*

Students must submit with their applications the results of the Aptitude Tests of the Graduate Record Examination; arrangements to take should be made directly with the Educational Testing Service, Box 955, Princeton, New Jersey 08540, U.S.A. In addition to the normal application a statement concerning the student's plans, aims, and interests within anthropology is required.

A number of teaching assistantships are available to graduate students in the Department. Students who wish to be considered for such assistantships should inform the Graduate Adviser of the Department. Scholarships are also available from the University, and are applied for directly to the Fellowship Office of the Faculty of Graduate Studies and Research. Students should also apply for Canada Council and other outside fellowships whenever possible.

Applications for graduate admission must reach the Department not later than 1 March if applicants wish to be considered for September admission, although in exceptional cases later applications might be considered. Applicants can expect to hear the outcome of their application by about 1 April.

REQUIREMENTS

Requirements for the M.A. Degree

Demonstration of competence in four topics of anthropology: e.g. political anthropology, economic anthropology, archaeological theory, methodology, etc. is required. Work on a culture area is also required. Information available from the Department defines and specifies the competences to be gained.

The presentation and defence of a thesis proposal and the completion of a short thesis demonstrating the ability to, and the experience of, having carried an anthropological research project through all its stages — planning on the theoretical, methodological and ethnographic level, gathering data, and writing up of results.

Requirements for the Ph.D. Degree

Completion of all requirements for the M.A. degree. Students holding an M.A. from a university other than McGill may be asked to make up any deficiencies in their prior preparation before continuing on to the remaining requirements.

Candidates must (1) demonstrate competence in a language other than English which is relevant to their research plans. They should do this before taking their preliminary examination, and definitely before they submit their thesis. (2) pass an oral examination on three subfields of the discipline. One of these fields will usually be a culture area. The other two special fields will be topics for which departmental supervision is available. The examination will emphasize the relation of the three fields to the field research that the candidate proposes; (3) orally present a fieldwork proposal, often, but not necessarily, conjointly with the preliminary examination; (4) carry out fieldwork and present and orally defend a completed thesis.

COURSES FOR HIGHER DEGREES

N.B. Courses at the 400-level are primarily oriented towards third-year undergraduates. Only a few of the 600- and 700-level seminars are given in any one year.

151-412A — SEMINAR ON CONTEMPORARY THEORY.
Professor Salzman

151-420B THE USE OF MATHEMATICS IN ANTHROPOLOGY.
Professor Rousseau

151-427B — SEMINAR ON SOCIAL CHANGE IN SOUTH ASIA.
Professor Attwood

151-436A — SEMINAR ON NORTH AMERICAN NATIVE PEOPLE.
Professor Lambert

151-437B — ANTHROPOLOGICAL APPROACHES TO CULTURE CHANGE.
Professor Lambert

151-440A — SEMINAR IN THE ANTHROPOLOGY OF COGNITION.
Professor Rousseau

151-445B — SEMINAR ON MIDDLE EASTERN SOCIETY AND CULTURE.
Professor Salzman

151-447B — EARLY PREHISTORY OF THE NEW WORLD.
Professor Ikawa-Smith

151-680A M.A. TUTORIAL READING.
Staff

151-681B M.A. TUTORIAL READING.
Staff

151-682A M.A. TUTORIAL READING.
Staff

151-683B MA. TUTORIAL READING.
Staff

151-684D M.A. TUTORIAL READING.
Staff

151-700D Ph.D. PRELIMINARY EXAMINATION.

151-702A SEMINAR: ETHNOHISTORY METHOD.
Professor Trigger

151-710B SEMINAR: RELIGION.
Professor Rousseau

151-716A SEMINAR: TOPICS IN THE ANTHROPOLOGY OF COMPLEX SOCIETIES.
Staff

151-720B SEMINAR: POLITICAL ANTHROPOLOGY.
Staff

151-723B SEMINAR: CONTEMPORARY SOCIAL INSTITUTIONS IN AFRICA.

* **151-724B SEMINAR: CONTEMPORARY SOCIAL INSTITUTIONS OF THE CARIBBEAN.**

151-725B SEMINAR: NORTHERN RESEARCH.
Staff

152-726B SEMINAR: MIDDLE EASTERN ANTHROPOLOGY.
Staff

151-730D ANTHROPOLOGY WORKSHOP.
Staff

151-755A SEMINAR: RESEARCH METHODS.

151-770B SEMINAR: THEORETICAL PROBLEMS AND CONCEPTS IN THE STRUCTURE OF CULTURE.
Staff

151-775A SEMINAR: ANTHROPOLOGY OF DEVELOPMENT.
Professor Salisbury

151-780A READING AND RESEARCH.
Staff

151-781B READING AND RESEARCH.
Staff

151-782A SEMINAR: URBANISM.
Professor Aronson

151-783B SEMINAR: MIGRATION.
Professor Aronson

F2 CENTRE FOR DEVELOPING AREA STUDIES

Director — PROFESSOR T.L. HILLS

The main function of the Centre is to encourage and coordinate interest in developing-area studies in the social sciences and to draw attention to the necessary links with the applied sciences both at McGill and in cooperation with other institutions through the agency of an Advisory Board and a small Executive Committee. To further this end, the Centre offers weekly informal workshops directed chiefly to McGill graduate students and organizes public lectures by visiting speakers.

COURSES AND SEMINARS

The list given below is provided for reference purposes only and represents all the courses offered by the University which could be of immediate interest to students of "development".

* **ANTHROPOLOGY 151-423A IDEOLOGY AND CONCEPTS IN SOCIAL ANTHROPOLOGY.**
Professor Gutkind

* **ANTHROPOLOGY 151-450B THIRD WORLD PEASANTRIES: THE CHANGE FROM RURALITY OF URBAN PROLETARIANS.**
Professor Gutkind

ANTHROPOLOGY 151-716A SEMINAR: Topics in the anthropology of complex societies.
Staff

ANTHROPOLOGY 151-723B SEMINAR: CONTEMPORARY SOCIAL INSTITUTIONS IN AFRICA.

* **ANTHROPOLOGY 151-724B SEMINAR: CONTEMPORARY SOCIAL INSTITUTIONS OF THE CARIBBEAN.**

ANTHROPOLOGY 151-775A SEMINAR: ANTHROPOLOGY OF DEVELOPMENT.
Professor Salisbury

* **ECONOMICS 154-736B TECHNIQUES OF DEVELOPMENT PLANNING.** A study of long-term planning to bring about structural changes in the economy and raise growth and employment rates. Emphasis is on underdeveloped countries and underdeveloped regions.

ECONOMICS 154-742B ECONOMIC AND POLITICAL DEVELOPMENT. This course will discuss the continuing Canadian problems of unemployment, inflation and foreign ownership, the Harrod question. "Are monetary and fiscal policies enough?", the necessary integration of all elements of economic policy including trade, exchange rate, competition, resource and growth objectives.
Professor Kierans

* **ECONOMICS 154-782B AGRICULTURAL POLICY.** The nature and objectives of policy; use of economic analysis as a guide to formation and appraisal of agricultural policy; fallacies; the time dimension; reconciliation of conflicts; problems confronting agriculture — instability, inter-industry and interregional inequality, poverty and inefficiency; policies for achieving greater economic welfare and progress.

GEOGRAPHY 183-605B ECONOMIC GEOGRAPHY PART II.

GEOGRAPHY 183-609B HUMAN GEOGRAPHY: SOCIAL AND BEHAVIOURAL PROBLEMS.

GEOGRAPHY 183-622A,B HUMID TROPICAL ENVIRONMENTS.

POLITICAL SCIENCE 160-647A POLITICAL DEVELOPMENT.

POLITICAL SCIENCE 160-747B RICH NATIONS AND POOR NATIONS: DEPENDANCE AND DEVELOPMENT.

* **POLITICAL SCIENCE 160-748B SOUTH ASIAN POLITICS.**

Seminars in the field of "development" are also offered on request by the Brace Research Institute and the Faculty of Engineering:

AGRICULTURAL ENGINEERING 336-602A ENVIRONMENT CONTROL IN AGRICULTURAL STRUCTURE. A study of the environmental effects of housing on plants and animals. The production, maintenance and control of the environment. The effects of the interior environment on structured components.
Professor Ogilvie

AGRICULTURAL ENGINEERING 336-609A HYDROLOGY. A fundamental course in hydrology. Topics covered include the inter-relationships between precipitation, interception, infiltration, evapotranspiration, and surface run-off; analysis of precipitation and streamflow data, use of hydrograph; hydraulics of groundwater; use and replenishment of groundwater; evaporation and transpiration; irrigation water requirements.
Professor Broughton

NOTE: Further information about the Centre's plans and activities may be obtained by writing to the Director.

F3 DEPARTMENT OF ECONOMICS

STAFF

Professors — A. ASIMAKOPULOS *(Chairman);* E.F. BEACH; I. BRECHER; E. KIERANS; J.C. WELDON; H.R.C. WRIGHT
Associate Professors — A. DEUTSCH; A.H. FENICHEL; M. FRANKMAN; J.A. GALBRAITH; C. GREEN; J. HANDA; S.H. INGERMAN; J. ITON; J. KURIEN; K. LEVITT; M.A. LOUTFI; M.F. LOUTFI; L.A. SODERSTROM; T. VELK; A. VICAS
Assistant Professors — P. DAVENPORT; G. GRANTHAM; R. NAYLOR

This announcement is prepared early in the calendar year, and so is likely to need modification by the time the academic year begins. A mimeographed supplement is available at the Department Office, and should be consulted. Changes are not likely to be numerous, but in some instances may be important to a sensible choice of program.

REQUIREMENTS

Admission

Students holding a B.A. degree may be eligible for admission. Preparation equivalent to a McGill Honours Program in Economics is the normal requirement. Students who have deficiencies in their preparation but are otherwise judged to be qualified are admitted to a qualifying year, in which they undertake advanced undergraduate work.

Lectures and examinations in the graduate program in Economics are organized around 10 broad fields: (1) Econometrics; (2) Economic Development; (3) Economic History; (4) Economic Theory; (5) Industrial Organization; (6) International Trade; (7) Labour Economics; (8) Mathematical Economics; (9) Money and Banking; (10) Public Finance.

Courses at the 600 level will be offered in most of these fields in each session, and when such a course cannot be offered in a particular field a reading course, with tutorial assistance, will be made available. Students who have not previously passed a suitable course in Statistics must take the undergraduate honours statistics course. Economics 154-357D. A two-semester course in the history of economic thought is also a prerequisite for a graduate degree in economics, and students who have not taken such a course will be required to take Economics 154-350D. Courses at the 700 level (seminars) are offered in most of the 10 fields listed above. They are generally given in the second term and have as a prerequisite the corresponding 600 level courses.

Requirements for the M.A. Degree

The Master's degree in Economics is obtained after successful completion of the Graduate General Written Examination, course and seminar requirements, and a thesis. The minimum passing grade for graduate courses and examinations is 65%. A well prepared student should not require more than 12 calendar months to complete the degree requirements.

1. The Graduate General Written Examination consists of two comprehensive examinations. Each M.A. student must write two papers:
    i) 2 three-hour examinations in economic theory (micro and macro) and
    ii) a three hour comprehensive examination in another field chosen by the student from the 10 listed above (excluding Mathematical Economics).

The courses in Economic Theory, 154-611D and 154-621D, help prepare the student for the comprehensive examination in theory, and the appropriately named 600 level course provides assistance in preparing for the other field examination; but it is the responsibility of the student to ensure that he is adequately prepared for the whole of his fields.

2. The student must obtain at least 65% in an approved 600 level one-term course in a field other than economic theory or his comprehensive field. This course may be in another discipline.
3. Successfully complete the requirements of one 700 level course (seminar).
4. Complete a Master's thesis, the subject of which must be approved by the Research Committee. The paper written for one of the student's seminars (700 level courses) often forms the basis of his thesis.

Requirements for the Ph.D. Degree

The requirements for the doctoral degree are:

(1) Successful completion of the Graduate General Written examination in economic theory and in two other special fields, (2) three 700 level seminars, (3) successful completion of the Quantitative Methods course (665A) unless Econometrics is one of the student's fields, (4) a language requirement, (5) successful completion of the Ph.D. Oral Comprehensive examination (normally in the same fields as in (1), (6) a dissertation, (7) three years of residence.

McGill students must normally receive a minimum grade of 70% in the Graduate General Written Examination to be considered for the doctoral program. Students who obtain an average of at least 75% in this examination and in their course and seminar requirements may be permitted to proceed directly to the Ph.D. program without completing a Master's thesis.

Candidates from other universities will be considered for admission to the doctoral program if they possess an M.A. degree and have a good academic record. They will be required to take the Graduate General Written Examination at the same time as the M.A. students before they can proceed to their Ph.D. Oral Comprehensive Examination. At the first examination period they must write the economic theory paper and one of the special field examinations, but they can postpone the second special field examination until the second examination period. Students whose performance, as judged by their results in the Graduate General Examination and their seminars, is considered to be inadequate for Ph.D. work, may be asked to withdraw from the Ph.D. program.

In the first year of the Ph.D. program the student is strongly advised to take the two economic theory courses 154-611D and 154-621D and the seminars 154-720A, Microeconomics and 154-722B, Macroeconomics. These are designed to cover the economic theory requirements for the Ph.D. students. Three seminars will be required (one of which might have been taken as part of the M.A. program at McGill). The passing grade in each course or seminar is 65%. In addition, students must take 154-665A (Quantitative Methods in Economics).

The student must pass examinations in translating into English from an unseen text in two approved modern languages, or an examination in translating one language at an advanced level.

The student may, if he chooses, satisfy the language requirement by passing an examination involving the translation of an unseen text in English into French, at an advanced level.

If the candidate's mother tongue is not English, the Graduate Faculty may, if the Department so recommends, exempt that student from one of the two required language tests. An examination in mathematics may be substituted for one of the language requirements.

The student must pass an Oral Comprehensive Examination (154-799D) in three fields. One of these must be Economic Theory (including History of Economic Thought) while the remaining two are to be chosen from among the fields listed earlier (excluding Mathematical Economics). Before taking this examination the student must have passed comprehensive examinations in economic theory and *two* special fields. At the Ph.D. level, a student is designated either a Pass or a Failure. A student who fails the Oral Comprehensive Examination may resit that examination after a minimum of three months has elapsed, and will be re-examined in all three fields.

The student must write a doctoral dissertation which makes an original contribution to the literature. The topic must be approved by the Research Committee and the dissertation will be supervised by a three-man committee, whose Chairman is the student's Director of Research. It must be passed by an external examiner as well as his/her committee.

COURSES FOR HIGHER DEGREES

154-601D M.A. GRADUATE GENERAL WRITTEN EXAMINATION.

154-602A ECONOMIC HISTORY. Selected topics in European and North-American economic history are investigated from the standpoint of the interplay of institutional change and quantitative growth.
Professor Naylor

154-611D MICROECONOMICS. A systematic course in the elements of microeconomic theory deemed essential for the Graduate General Examination.
Professors Weldon and Kurien

154-621D MACROECONOMICS. A systematic course in the elements of macroeconomic theory deemed essential for the Graduate General Examination.
Professors Davenport and Ingerman

154-622A PUBLIC FINANCE. An analysis of the public revenue and expenditure structure and its effects on resource uses and income distribution. Analysis of the effects of fiscal policy upon the level of employment, prices, and the rate of economic growth.
Professor Kierans

154-623A MONEY AND BANKING. An examination of the effects of money, near monies and financial institutions upon the structure and operations of an economic system.
Professor Handa

154-624A INTERNATIONAL ECONOMICS. A detailed examination of theories and policies in international trade and finance.
Professor Vicas

* **154-631A HISTORICAL EXPERIENCE OF ECONOMIC DEVELOPMENT.** Examination of historical patterns of development in relation to currently less developed countries.

154-633D MATHEMATICS FOR ECONOMISTS. An introduction to the techniques of calculus and linear algebra frequently encountered in economic theory and econometrics.
Professor Handa

154-634A ECONOMIC DEVELOPMENT. A systematic treatment of the characteristics and problems of economic development in underdeveloped countries.
Professor Brecher

154-641A LABOUR ECONOMICS. A synthesis of theoretical developments in the area of labour economics with stress upon problems of empirical testing.
Professor Soderstrom

* **154-650A SELECTED TOPICS IN HISTORY OF ECONOMIC THOUGHT.**

154-662A INTRODUCTION TO ECONOMETRICS.

154-664B ECONOMETRICS. A discussion of Economic Methods of handling errors in variables, autoregression, multicolliniarity, heteroscedasticity, lagged variables, dummy variables, and the handling of simultaneous equations.

154-665A QUANTITATIVE METHODS. A survey of quantitative methods frequently used in economic research. Special emphasis will be placed upon the formulation and evaluation of econometric models. Illustrations will be drawn from the existing empirical literature in economics. Required for all Ph.D. students who have not taken Econometrics as a field.
Professor Soderstrom

* **154-667A-668B MATHEMATICAL ECONOMICS.** A mathematical treatment of basic economic theory.

154-701D Ph.D. GRADUATE GENERAL WRITTEN EXAMINATION.

154-702B ECONOMIC HISTORY. A study of the historical background to economic growth and change in one country during a limited period of modern history. Other countries and other periods will be taken into account for purposes of comparison.
Staff

154-711B THEORY OF THE FIRM. A specialized study of the theory of the process of the firm.

154-712B PUBLIC FINANCE. Selected topics in public finance.
Professor Kierans

* **154-713B WELFARE ECONOMICS.** This course is intended for graduate students who have had a course in advanced theory and who, in particular, are well acquainted with modern demand theory. It

is intended as a supplement to descriptive and analytical economics.

154-720A MICROECONOMICS. Topics in microeconomics. This course is normally a prerequisite for the general oral examination for the Ph.D. degree in economics.
Professor Weldon

154-721B ADVANCED MONETARY THEORY. This seminar will examine selected topics in monetary theory, the theory of monetary policy, and the history of monetary institutions. Seminar participants will be asked to prepare at least one paper.
Professor Handa

154-722B MACROECONOMICS. A systematic examination of selected topics in Macroeconomics. This course is normally required as a prerequisite for the general oral examination for the Ph.D. in economics.
Professor Asimakopulos

154-724B INTERNATIONAL ECONOMICS. Selected problems in international trade, foreign exchange and international movements of capital.
Professors Frankman and Vicas

154-725B COST BENEFIT ANALYSIS. A discussion of the development and scope of the subject. An examination of the concepts of consumers' surplus and rents, transfer payments, shadow pricing, external economies and diseconomies; a discussion of investment criteria and the problem of uncertainty. A study of some specific applications of the cost-benefit technique.
Professor Iton

* **154-731B CANADA-UNITED STATES ECONOMIC RELATIONS.** A study of key issues affecting economic relations between Canada and the United States. Among the topics analyzed will be foreign investment, the balance of payments, business fluctuations, and commercial and agricultural policies.

* **154-732B TRANSPORTATION.** A study of the economics of transportation; its relation to the general body of economic theory; government regulation with emphasis on factors that fashion it.

154-734B ECONOMIC DEVELOPMENT. Problems of economic growth and planning in selected underdeveloped countries. (This seminar is also listed in the Centre for Developing Area Studies).
Professor Levitt

154-735D GOVERNMENT REGULATION OF BUSINESS. Economic and legal problems in government promotion and maintenance of competitive industry. Major attention will be devoted to Canada, with comparisons to be drawn from United States and European experience. (This seminar is given jointly by the Faculty of Law and the Department of Economics).
Professors Jones and Vicas

* **154-736B TECHNIQUES OF DEVELOPMENT PLANNING.** A study of long-term planning to bring about structural changes in the economy and raise growth and employment rates. Emphasis is on underdeveloped countries and underdeveloped regions.

154-738A SELECTED TOPICS IN ECONOMIC GROWTH. A study of selected problems in economic growth, with special emphasis to the interactions between employment, investment, productivity and technical change in a growing economy. In 1976-77, the course will concentrate on technical change and employment.

154-741B ADVANCED LABOUR ECONOMICS. A combined lecture and research seminar covering selected theoretical and policy issues in labour economics.
Professor Ingerman

154-742B ECONOMIC AND POLITICAL DEVELOPMENT. This course will discuss the continuing Canadian problems of unemployment, inflation and foreign ownership, the Harrod question, "Are monetary and fiscal policies enough?", the necessary integration of all elements of economic policy including trade, exchange rate, competition, resource and growth objectives.
Professor Kierans

* **154-744B HEALTH ECONOMICS.** The emphasis in this seminar will be on describing and analyzing the structure and performance of the Canadian health system, though some attention will be given to recent attempts by the federal and provincial governments to deal with current problems in this field. Readings will be selected from the economics and health literature.
Professor Soderstrom

160-745B MACHINERY OF GOVERNMENT. This seminar will consist of a detailed examination of a problem in Canadian government and administration. Problems will include topics dealing with cabinet government, parliamentary organization, federalism, public administration and the impact of political forces on them.
Professors Kierans, Mallory and Weldon

* **154-750A SELECTED TOPICS IN ECONOMICS.** This seminar will deal with topics of interest to the students and staff who are organizing the seminar. These topics will be in areas other than those covered by existing seminars and particular attention will be paid to critiques of neoclassical economic theory.
Staff and Students

* **154-761A INPUT-OUTPUT ANALYSIS, LINEAR PROGRAMMING AND MULTISECTORAL ECONOMIC MODELS.** National Economic Accounting, including Input-Output, and Flow of Funds accounts. Analytical uses relating to the impact of public and

other expenditures on income, imports, savings, employment, etc.
Professor Levitt

154-762D ECONOMETRICS. Econometric theory and application.

* **154-767B APPLIED QUANTITATIVE ECONOMICS.** Co-ordinated quantitative research projects under the guidance of the instructor to increase facility in quantitative research.

* **154-781A AGRICULTURAL ECONOMICS.** The nature of agricultural production; the economics of size in agriculture; intensity of production; the pricing mechanism for farm products; agriculture in world commerce, FAO, ITO; the role of agriculture in the Canadian economy; economic problems confronting the Canadian farm industry.

* **154-782B AGRICULTURAL POLICY .** The nature and objectives of policy; use of economic analysis as a guide to formation and appraisal of agricultural policy; fallacies; the time dimension; reconcilation of conflicts; problems confronting agriculture — instability, inter-industry and interregional inequality, poverty and inefficiency; policies for achieving greater economic welfare and progress.

154-799D Ph.D. ORAL COMPREHENSIVE EXAMINATION.

NON-CREDIT AND QUALIFYING-YEAR COURSES IN ECONOMICS

154-241D THE INTERNATIONAL ECONOMY SINCE 1850.
Professor Wright

154-250D INTRODUCTION TO ECONOMIC THEORY.
Professor Asimakopulos

154-301B MODERN ECONOMIC HISTORY OF SOUTH ASIA.
Professor Iton

154-311D NORTH AMERICAN ECONOMIC DEVELOPMENT.
Professor Fenichel

154-350A HISTORY OF ECONOMIC THOUGHT.
Professors Vicas and Brecher

154-352D MACROECONOMICS.
Professor Handa

154-357D ECONOMIC STATISTICS.

154-404D TRANSPORTATION.

154-408D PUBLIC FINANCE.
Professor Deutsch

154-426D LABOUR ECONOMICS.
Professor Soderstrom

154-450D ADVANCED ECONOMIC THEORY.
Professors Asimakopulos and Weldon

154-451B SEMINAR IN ECONOMIC HISTORY.
Professor Grantham

154-453D INTERNATIONAL ECONOMICS.
Professor Brecher

154-458D MONEY AND BANKING.
Professor Velk

F4 FRENCH CANADA STUDIES PROGRAM CENTRE D'ETUDES CANADIENNES FRANÇAISES

STAFF

Director — Professor MAX DORSINVILLE

PROGRAM

In 1963-64 McGill University established a French Canada Studies Program. Much of the energies and resources of the Program are devoted to research and teaching with a view to making McGill a centre of advanced study and original research in this area.

Graduate students may register with the French Canada Studies Program should their main field of study be French Canada. They should apply directly to the French Canada Studies Program which will then contact the relevant department in order to ascertain if the department is prepared to receive the applicant as a degree candidate and to appoint a co-director of research. The Director of the French Canada Studies Program, or his representative, and the departmental appointee will then act jointly and watch over the interests of the applicant.

Graduate students taking courses dealing in whole or in part with French Canada, or who are studying French Canada as their special field of study, are cordially invited to make use of the reference, documentation and bibliographical facilities of the French Canada Studies Program.

En 1963, un Centre d'Etudes canadiennes-françaises fut créé à l'Université McGill. En collaboration avec les autres Départements de l'Université, le but de ce Centre est d'assurer un enseignement et de développer la recherche à un niveau supérieur, sur divers aspects du Canada français.

Les étudiants qui désirent poursuivre des études en vue de l'obtention d'une maîtrise ou d'un doctorat en études canadiennes-françaises doivent agir de la manière suivante: l'étudiant gradué fait sa demande d'admission directement au Centre d'Etudes canadiennes-françaises. Celui-ci s'assure auprès du Département concerné que le candidat est suffisamment qualifié et l'accepte au niveau de

la maîtrise ou du doctorat, suivant le cas. Le Directeur du Centre d'Etudes canadiennes-françaises, ou son délégué, et un représentant du Département dirigent conjointement les travaux de l'étudiant.

Les étudiants dont les cours portent, en tout ou en partie, sur le Canada français, ou qui se spécialisent dans ce domaine sont invités à se prévaloir du service de référence, de documentation et de bibliographie du Centre d'Etudes canadiennes-françaises.

COURSES

157-626A PROBLEMES POLITIQUES DU QUEBEC. Quels sont les principaux modèles qui ont été proposés pour expliquer l'évolution de la société québécoise: le modèle historique, le modèle sociologique, le modèle marxiste? Quelles sont les principales querelles scientifiques ayant cours dans les interprétations historiques et contemporaines de la société québécoise: l'importance de la conquête, l'impact des structures mentales sur le retard économique du Québec, le rôle du clergé, la Révolution tranquille, la lutte pour l'indépendance politique.
Professeur Daniel Latouche

* **157-627B ETUDES EMPIRIQUES DE LA SOCIETE QUEBECOISE.** Ce séminaire est réservé aux étudiants qui sont intéressés à mener à bien ou à participer à des études empiriques sur certains aspects de la réalité québécoise. Parmi les thèmes suggérés, mentionnons le fédéralisme canadien, le mouvement indépendiste québécois, les relations inter-ethniques au Canada, les mouvements de gauche au Québec. Le but du séminaire est de permettre à l'étudiant d'appliquer concrètement les instruments d'analyse qu'il possède.

F5 DEPARTMENT OF GEOGRAPHY

STAFF

Professors — J.B. BIRD; B.J. GARNIER *(Chairman);* T.L. HILLS; J.T. PARRY; S. OLSON
Associate Professors — W. ARMSTRONG; M.A. CARSON; R.N. DRUMMOND *(on leave 1976-77);* P.G. HOLLAND; J. LUNDGREN; B.H. MASSAM; E. WADDELL; R.C. ZIMMERMANN *(on leave 1976-77);*
Assistant Professors — J.J. DRAKE; G.O. EWING *(on leave 1976-77);* W.B. KEMP; J.E. LEWIS; T. MOORE; F.H. NICHOLSON *(Director, Subarctic Research Laboratory, Schefferville, Que.);*
Honorary Staff — F. MÜLLER

REQUIREMENTS

Admission: M.A. and M.Sc. Degrees

Attention is directed to the Faculty of Graduate Studies admission regulations outlined in the General Information and Faculty Regulations section headed "Admission".

Applicants not satisfying these conditions but with primary undergraduate specialization in a cognate field may register for the M.A. or M.Sc. degree in Geography in certain circumstances, but in general they will be required to register for a qualifying year, as will all others who have deficiencies in their preparation but are otherwise judged to be qualified.

Requirements for the M.A. Degree

Candidates must:

(1) pass written (and in some cases oral) examinations in at least five graduate half courses; three selected from Geography 183-602A to 608A and 610B; and two selected from *either* those named above *or* those offered elsewhere in the Geography Department, *or* those offered elsewhere in the University.
(2) attend the Graduate Colloquium, Geography 183-631D and such additional courses in Geography or cognate subjects as the Chairman and the student's director of research think fit. The additional courses may be for audit or examination;
(3) submit a thesis in an appropriate area of geographical inquiry.

The quality of the thesis will determine the final standing of the student.

Requirements for the M.Sc. Degree

Candidates must:

(1) pass written (and in some cases oral) examinations in at least five graduate half courses: two selected from Geography 183-611A, B to Geography 183-615A, B; one selected from Geography 183-632A, B to Geography 183-635A, B; one selected from the entire list of Geography graduate courses; and one selected either from the entire list of Geography courses, or from the courses taught in any other department in the University.
(2) attend the Graduate Colloquium, Geography 183-631D, and such additional courses in Geography or cognate subjects as the Chairman and the student's director of research think fit.
(3) submit a thesis in an appropriate area of geographical inquiry.

The quality of the thesis will determine the final standing of the student.

Admission: Ph.D. Degree

Students who have attained high standing in the Master's degree in Geography at McGill may be permitted to proceed to the Ph.D. in two further years. Rarely, a student may be allowed to register for the Ph.D. degree without having first taken the Master's degree. The normal duration of a program, including field work where required, is three years.

Normally, the Department will restrict admission to the Ph.D. program to students prepared to work in one of the fields of human or physical geography in which specialized supervision is offered. These, which cover a wide range of systematic areas, are listed in documents available from the Department.

Requirements for the Ph.D. Degree

Candidates must:

(1) remedy any deficiencies in their formal training in geography and necessary cognate subjects;
(2) submit themselves for a comprehensive examination (183-701D) comprising prepared papers and an oral examination. Competence in certain fields may be tested separately, but as a necessary part of this examination;
(3) submit a thesis based on original research in human or physical geography;
(4) attend the Graduate Colloquium, Geography 183-631D, during one of their resident years, and other courses as determined individually;
(5) comply with a language requirement if this is so recommended by the student's committee.

To satisfy these requirements, the candidate may take any of the graduate or undergraduate courses offered by the Department.

COURSES AND SEMINARS FOR HIGHER DEGREES

All courses meet once in each week.

183-602A URBAN GEOGRAPHY, PART 1. A critical review of environmental and spatial preference and perception in an urban context, together with an introduction to appropriate measurement and scaling techniques.
Professor Olson

183-603B URBAN GEOGRAPHY, PART II. Allocation-location problems in the public and private sectors; urban model-building; urban politics.
Professor Massam

183-604A ECONOMIC GEOGRAPHY, PART I. A geographical study of the phenomenon of entrepreneurship; its logistical, organizational and locational characteristics; scale of operation; the different forms of entrepreneurship in the economic geography of different levels of economic development.
Staff

183-605B ECONOMIC GEOGRAPHY, PART II. A critical review of research on manufacturing industry, with particular emphasis on (a) the analysis of industrial agglomeration, (b) manufacturing in economically disadvantaged areas, (c) some geographical aspects of the multinational corporation, and (d) innovation and technology transfer.
Staff

183-606A GEOGRAPHY AND DEVELOPMENT, PART I. A review of the spatial problems of economic development in countries of the developing world, together with an examination of processes generating spatial inequality. Ecological considerations in economic development.
Professor Hills and Staff

183-607B GEOGRAPHY AND DEVELOPMENT, PART II. An examination of development problems in rural and urban areas of the Third World, with emphasis on agrarian structures and the social geography of urbanization. Regional emphasis will vary according to the interests of members of the seminar.
Professor Hills and Staff

183-608A CULTURAL GEOGRAPHY PART I. A review of the aims and realizations of cultural ecology and its reference to research in the Third World, as well as a discussion of ethical questions that arise.
Professor Waddell

183-609A,B HUMAN GEOGRAPHY: SOCIAL AND BEHAVIOURAL PROBLEMS. A survey of the treatment of society, social institutions and the individual as units of analysis within geography. Explanation and cognitive description in human geography.

183-610B CULTURAL GEOGRAPHY PART II. The seminar will discuss the processes by which individuals and communities adapt to their physical, social and ideological environments over time, and on the methods and techniques for measuring and analyzing these processes.
Professor Kemp

183-611A,B ADVANCED CLIMATOLOGY. An advanced study of the principles of physical climatology and their application to the spatial variations and characteristics of energy and water balances in rural and urban environments.
Professor Garnier and Staff

183-612A,B ADVANCED PHYSIOGRAPHY. An analysis of recent advances in geomorphology.
Professors Bird and Carson

183-613A,B ADVANCED BIOGEOGRAPHY. An examination of the history, methods and objectives of biogeography, with emphasis on plants.
Professors Holland and Zimmermann

183-614A,B SOILS AND WEATHERING. An examination of the major processes operating in soils: weathering reactions, pedogenetic processes, and soil nutrient relationships. The course will include laboratory work and a small project to illustrate the main techniques.
Professor Moore

183-615A,B HYDROLOGY AND WATER RESOURCES. An analysis of recent developments in hydrology, with emphasis on their applications to geographical problems. Snowmelt systems and the hydrological effects of basin development.
Professor Drake

183-622A,B HUMID TROPICAL ENVIRONMENTS. A geographical approach to the study of sample rain-forest and savanna landscapes of the humid tropics, with special attention to the human impact on the balance between forest and savanna.
Professor Hills

183-623A SEMINAR ON REGIONAL RESEARCH, PART I. Presentation of background, and discussion of research interest of varied nature, in a region of common interest to a group of graduate students and staff. Regions will vary according to interest; probable selections will include Quebec, the Gulf of St. Lawrence and the Maritimes, the Arctic and Northlands, the Caribbean, tropical Latin America.
Staff

183-624B SEMINAR ON REGIONAL RESEARCH, PART II. (See course 183-623A for description).
Staff

183-631D METHODS OF GEOGRAPHICAL RESEARCH. A review of the accepted methods of research in geographical problems, in both physical and human fields. The approach will be practical, and will require the presentation of formal research papers for criticism and discussion.
Staff

183-632A,B ADVANCED CARTOGRAPHY. A systematic examination of modern geographic-cartographic techniques for the collection, evaluation, presentation and reproduction of spatially distributed data. Practical experience in the laboratory, the photographic darkroom, field work and visits to cartographic agencies are an integral part of the course.
Professor Drummond

183-633A,B REMOTE SENSING. (Not available to students registered in Geography 183-635A,B). A review of aircraft and spacecraft remote sensing systems and their applications.
Staff

183-634A,B QUANTITATIVE METHODS IN GEOGRAPHY. An examination of certain techniques in geographic research and their limitations. Emphasis is directed to the use of correlation and regression analysis, and to multivariate extensions of these techniques.
Professor Carson

* **183-635A,B INTERPRETATION METHODS: AIR PHOTOS AND IMAGERY.** (Not available to students registered in Geography 183-633A, B). Basic photogrammetry and interpretation procedures for aircraft and spacecraft photography and imagery.
Professor Parry

McGill Subarctic Research Laboratory

This laboratory (under the direction of Professor Nicholson) is at Knob Lake (Schefferville), in the heart of Labrador-Ungava. Facilities exist for research in most aspects of physical geography. Extensive field programs are arranged. All inquiries should be addressed to the Chairman, Geography Department.

F6 DEPARTMENT OF HISTORY

STAFF

Professors — C.C. BAYLEY; V. BOSS; P.C. HOFFMANN *(on leave 1976-77);* H. SENIOR *(on leave 1976-77);* R. VOGEL
Associate Professors — P.H. BOULLE; L.L. LaPIERRE; P.T.K. LIN; M.P. MAXWELL; A.R. RIGGS
Assistant Professors — M.J. ECHENBERG *(on leave 1976-77);* J.W. HELLMAN; ELLA LAFFEY; C.I. MILLER; S.J. RANDALL *(Chairman);* J.H. THOMPSON; B.J. YOUNG
Visiting Staff — PROFESSOR W. LEITSCH;

REQUIREMENTS

Admission

Candidates should submit their applications before 15 March 1977.

Ph.D. Language Requirements

Candidates must offer one foreign language for examination purposes and they must also demonstrate a reading knowledge of such other languages as are required for research purposes in their major field. The Department expects that candidates will have successfully demonstrated competence in the one required language by the end of their Ph.D. 3 year.

Requirements for the M.A. Degree

Candidates applying for a Master's degree in History are required to possess an Honours B.A. which may be in History alone or in History and one other subject. When taken in History alone it must include eleven full courses taken in prescribed sequence, together with certain other approved courses notably in foreign languages. Graduate students who

enter without this qualification may find it necessary to make good any deficiency in their undergraduate program and the Department is prepared to facilitate this.

Candidates may choose to proceed in one of two ways:

1. Candidates may proceed to the degree by the successful completion of the work of one (other than History 101-650D) of the Graduate Seminars listed below and by submitting an M.A. thesis, in the area of their special interest.
2. Candidates may proceed to the degree by:
   a) the successful completion of the work of History 101-616D, Seminar in the Philosophy of History (if not available, another seminar should be taken);
   b) the successful completion of the work in two further seminars one of which will represent the candidate's major field of interest and the other his minor field,
   c) a Research Paper (History 101-650D) in the candidate's major field.

101-650D RESEARCH PAPER IN MAJOR FIELD. This research paper must demonstrate the candidate's ability to do independent work in his major field of interest. It may not be presented before the completion of a full year (one academic session and a summer) of residence in the university. Permission may be given for the summer study to be undertaken at another institution. Regulations concerning the research paper may be obtained from the Department.

101-655D Candidates whose major interest lies in fields in which no seminar is offered may, with the consent of their Director of Studies, offer extra tutorial work and such other seminar work as designated by their Director.

Candidates should check with the Department with regard to graduate seminars in view of the possibility that not all the seminars listed will be available.

Requirements for the Ph.D. Degree

An M.A. in History is the prerequisite for all candidates applying to enter the Ph.D. program. Candidates at the end of the first resident year are required to pass an oral comprehensive examination consisting of:

101-702D Comprehensive examination in major field.

101-703D Comprehensive examination in first minor field.

101-704D Comprehensive examination in second minor field.

Candidates must consult with their Director of Studies at the beginning of their Ph.D. work in order to determine their minor fields.

With the completion of the oral comprehensive examination, candidates may proceed with their doctoral dissertation.

The Department is prepared to direct theses of Graduate students in the following fields:

British History

a) England in the Middle Ages.
b) Scotland and Ireland in the 16th, 17th and 18th centuries.
c) British History, social and political: Tudor-Stuart and 19th century.
d) British Imperial Policy: 1714-1914.
e) Certain aspects of British Foreign Policy since 1815.

Canadian History

a) The Canadian West.
b) The social and economic history of Montreal, 1800-1900.
c) The History of Lower Canada and Quebec in the 19th century.
d) Aspects of the History of French Canada in the modern period.
d) Canadian-American relations.

United States History

a) The history of the United States in the late colonial period.
b) The history of the United States in the 19th and 20th centuries.

European History

a) The constitutional development of the Holy Roman Empire in the 13th century.
b) The Reformation.
c) Aspects of the History of France.
d) Aspects of German History since 1800.
e) Aspects of the history of western Europe 1870-1914.
f) Russian and Soviet History.
g) Aspects of the history of Slavonic Europe.
h) War and Society in Modern Europe.
i) Certain aspects of the history of European-Chinese relations.
j) Aspects of Intellectual History of Modern Europe.
k) Certain aspects of the History of Science from the 16th century.

Non-European History

a) Aspects of West African History.
b) Aspects of 20th Century Chinese History.
c) Aspects of 20th Century Latin America (M.A. only).

The Redpath Library is well equipped with printed sources for the periods and subjects mentioned above, and students pursuing research in Canadian History will be required, as occasion arises, to avail themselves of the manuscript resources of the Public Archives at Ottawa and the Provincial Archives at

Quebec, and of parochial and other records in Montreal and its vicinity.

However, the Department may require candidates to spend one year in research at another university or repository of archives.

GRADUATE SEMINARS AND COURSES

101-604D SEMINAR: COLONIAL AMERICA.
Professor Riggs

101-605D SEMINAR: MODERN EUROPEAN INTELLECTUAL HISTORY.
Professor Hellman

* **101-607D SEMINAR: RELIGIOUS AND IDEOLOGICAL MOVEMENTS IN THE UNITED KINGDOM AND WESTERN EUROPE 1815-1914.**
Professor Senior

* **101-608D SEMINAR: SIXTEENTH AND SEVENTEENTH CENTURY BRITAIN.**
Professor Maxwell

* **101-610D SEMINAR: FRENCH COLONIES AND EXTERNAL COMMERCE IN THE EIGHTEENTH CENTURY.**
Professor Boulle

* **101-612D SEMINAR: GERMAN NATIONAL SOCIALISM.**
Professor Hoffmann

101-614D SEMINAR: SOCIAL MOVEMENTS IN WESTERN EUROPE IN THE LATER MIDDLE AGES.
Professor Bayley

* **101-616D SEMINAR: PHILOSOPHY OF HISTORY.**

* **101-624D SEMINAR: SOCIO-POLITICAL DEVELOPMENT IN BRITAIN 1815-1926.**
Professor

* **101-626D SEMINAR: THE WESTERNIZATION OF RUSSIA.**
Professor Boss

101-636D SEMINAR: AGRARIAN SOCIETY IN RUSSIA — 19th AND 20th CENTURIES.
Mr. Schlieper

101-652D SEMINAR: PROBLEMS IN CANADIAN HISTORY, 1867-1967.
Professor LaPierre

101-668D ASPECTS OF EAST ASIAN HISTORY.
Professor Ota

* **101-671D SEMINAR: AMERICAN SOCIETY FROM THE CIVIL WAR TO 1920.**
Professor Randall

101-683D SEMINAR: THE HISTORY OF MONTREAL.
Professor Young

101-691D SEMINAR: A HISTORY OF CANADA'S NATIVE PEOPLES. (Open *only* to students in the M.Ed. Teaching of History program).
Mr. Mulhall

* **101-696D SEMINAR: REVOLUTIONS IN EASTERN EUROPE AND RUSSIA.**

F7 LAW

DEGREES

The higher degrees in law are the M.C.L. (Master of Civil Law), the LL.M. (Master of Laws) and the D.C.L. (Doctor of Civil Law), as offered by the Institute of Air and Space Law, and the Institute of Comparative Law. All graduate students except those registered in the Institute of Air and Space Law come under the direction of the Institute of Comparative Law.

Requirements for the M.C.L. or LL.M. Degree

See the general regulations of the Faculty of Graduate Studies and Research on requirements for the Master's degree.

Candidates for admission to M.C.L. or LL.M. programs must hold the degree of B.C.L., with at least second class honours, from McGill University, or its equivalent, and satisfy the linguistic and other requirements of the Institute of his study. A candidate must follow the courses prescribed by the Institute, including cognate courses in other departments of study, submit an acceptable thesis and, if required by the Institute, undergo an oral examination designed to test the general knowledge of the field of the research studies.

The degree may be completed, by well-qualified and capable students, within one calendar year, but if all degree requirements have not been completed within this time an additional full academic session in residence is necessary. In exceptional circumstances, the Executive Committee of the Faculty of Graduate Studies and Research may grant an exemption from the requirement of a second residential year at McGill to a candidate who has failed to complete all the requirements for the master's degree within one year.

Requirements for the D.C.L. Degree

The program of each Institute consists of a minimum of three years' work from the first registration of the candidate. Only an applicant of proven legal scholarship of high merit will be admitted to candidacy for this degree and normally a candidate should be the holder of both a general degree and a law degree. In the case of a candidate who holds the M.C.L. or LL.M. degree of McGill or its equivalent from another university,

two years of resident study beyond the master's degree are required but may be reduced to one year with the approval of the Executive Committee of the Graduate Faculty on the recommendation of the Graduate Studies Committee of the Faculty of Law. In general, this non-resident year should be spent at another university or similar institution. An applicant must satisfy the linguistic and other requirements of the Institute of his study and, as a rule, an Institute will not permit a candidate who is not the holder of an appropriate master's degree, or its equivalent, to register directly for the D.C.L. but require him or her to register for the M.C.L. or LL.M. A candidate for the M.C.L. or LL.M. degree of McGill, who, upon the completion of his or her first year of resident study, shows considerable promise may, upon the recommendation of the appropriate Institute, be permitted to proceed to the second year of the D.C.L. program without being required to submit a Master's thesis.

At a stage in the program of studies as determined by the Institute a candidate must pass an oral examination, the purpose of which is to test his or her general knowledge of the field of his or her research studies. Further, a candidate will be required to defend his or her thesis before a jury appointed by the Faculty of Graduate Studies and Research and consisting of five adjudicants, including at least two who are not members of the Faculty of Law. To qualify for the degree the thesis submitted must be a significant contribution to legal scholarship, evidencing in concept and execution the individual work of the candidate, and in a form suitable for publication.

INSTITUTE OF AIR AND SPACE LAW

Staff

Professors — NICOLAS M. MATTE *(Director)*; H.R. HAHLO; I.A. VLASIC
Associate Professor — M.A. BRADLEY

Degrees and Diploma

The Institute of Air and Space Law operates within the Faculty of Law. The Institute provides facilities for advanced study and research in Air and Space Law and related problems of international law for qualified law graduates or others with appropriate qualifications. The Institute offers a Diploma in Air and Space Law and the degrees of Master of Laws (LL.M.) and Doctor of Civil Law (D.C.L.).

Diploma

Applicants for admission must hold, a law degree of high standing from an approved law school in any part of the world, or must have an equivalent professional standing. Working competence in the English language is required but examinations and other written work may be presented in French. All candidates must provide evidence of the subjects covered in their prior law studies and of their scholastic or professional standing together with two suitable references.

A candidate who satisfies the residence requirements of one session and who passes the prescribed examinations will be awarded the Diploma in Air and Space Law.

The prescribed courses are:

387-611D PUBLIC INTERNATIONAL AIR LAW.

387-612D PRIVATE INTERNATIONAL AIR LAW.

387-613D GOVERNMENT REGULATION OF CIVIL AVIATION.

387-614D SPACE LAW.

387-615D ECONOMICS OF AIR TRANSPORT.

387-616D INTRODUCTION TO CIVIL AND COMMON LAW.

387-617D TERM PAPER.

The Director may require additional courses of particular candidates.

Degree of Master of Laws

A working competence in the English language is required but examinations and written work including theses may be presented in either English or French. All candidates must present evidence of the subjects covered in their prior law studies and of their scholastic or professional standing together with two suitable references.

The prescribed courses are as those set out above for the Diploma, but, in addition, the candidates must present an acceptable thesis on a subject approved by the Director. In order to be allowed to submit a thesis, a candidate must have obtained a mark of at least 65% in each of the courses or seminars for which he or she is registered. No candidate may receive the Diploma and the Master's degree for the same course of studies. A candidate who has already received the Diploma in Air and Space Law may be accepted as a candidate for the Master's degree, but will be required to register for one additional academic session, and may also be required to undertake additional course work beyond the course work already performed for the Diploma.

Degree of Doctor of Civil Law

Candidates for the degree of Doctor of Civil Law must hold the degree of B.C.L. or LL.B. from McGill University or its equivalent from another university. As a rule, a candidate who does not already hold a master's degree will be required to complete the master's degree before being accepted for the doctoral program. A candidate who has obtained the master's degree or its equivalent from another university will, as a rule, be required to complete the courses prescribed for the first year of the master's degree. If his or her performance is not of sufficiently high standard to justify admission to the doctoral

program, he or she will not be permitted to proceed any further, but may be permitted to submit a master's thesis to qualify for the master's degree. If his or her performance is of sufficiently high standard, he or she may be permitted to proceed to the second year of the doctoral program without being required to submit a master's thesis.

The degree of Doctor of Civil Law is predominantly a research degree, and will be awarded on the basis of a thesis that represents an original contribution to the development of legal science. The thesis may be presented in English or French. All prospective candidates must provide evidence of the subjects covered in their prior law studies and of their scholastic and professional standing, together with two suitable references. The degree will be awarded, at the earliest, after the completion of three years from the first postgraduate registration of the candidate at McGill University. In the case of a candidate who holds the M.C.L. or LL.M. degree of McGill or its equivalent from another university, two years of resident study beyond the master's degree are required but may be reduced to one year with the approval of the Executive Committee of the Faculty of Graduate Studies and Research on the recommendation of the Graduate Studies Committee of the Faculty of Law. In general, this non-resident year should be spent at another university or similar institution.

INSTITUTE OF COMPARATIVE LAW

Staff

Professors — P.-A. CRÉPEAU *(Director);* DOMINIK LASOK
Associate Professors — ARMAND de MESTRAL; H. PATRICK GLENN; ETHEL GROFFIER ATALA
Assistant Professor — EWA-TERESA ELIASZ

The Institute of Comparative Law operates within the Faculty of Law. As a centre of comparative legal studies, the Institute provides facilities for graduate work, advanced studies and field research in areas of Public and Private Law. The Institute offers the degrees of Master of Laws (LL.M.), Master of Civil Law (M.C.L.) and of Doctor of Civil Law (D.C.L.).

Requirements for Master of Laws and Master of Civil Law Degrees

An applicant must hold the degree of B.C.L. or LL.B. with at least second class honours from McGill University, or its equivalent.

An adequate working knowledge of the English and French languages is required from all applicants. Applicants who wish to pursue studies which, in the opinion of the Director, require knowledge of a language other than English or French must possess adequate working knowledge of that language.

All applicants must present satisfactory evidence of the subjects covered in their prior law studies, of their scholastic or professional standing, and of their linguistic proficiency in English and French, together with not less than two suitable references.

Courses and Registration

Candidates for the Master's Degree must spend at least one academic year in residence. There is no uniform program of studies which every candidate must take. Each candidate follows a program of studies, determined by the Director, which in as far as possible is fashioned to meet his or her particular needs as determined by the candidate's prior legal experience and aspirations.

As a rule, a candidate must take in each of the two terms of the academic year a minimum of three courses. A candidate with a civil law background will normally be required to select at least one undergraduate course from the common law program, while a candidate with a common law background will normally be required to select at least one undergraduate course from the civil law program. The remaining courses may be selected, subject to the Director's approval, from the seminars provided by the Institute and any of the courses forming part of the curriculum for the B.C.L. or LL.B.

Each candidate will be required to submit a thesis on a subject approved by the Director either by the end of July following the academic year in which he or she first registered or at such date thereafter as might be determined by the Director. In the latter case, the thesis, with the permission of the Director, may be prepared *in absentia.*

In order to be allowed to submit a thesis, a candidate must have obtained a mark of at least 65% in each of the courses or seminars for which he or she registered.

Examinations, term papers and theses may be written either in English or French.

389-610A COMPARATIVE CIVIL LIABILITY. (2 hours, first term). A comparative study of selected contemporary problems in the field of civil responsibility. Areas of concern include: economic loss privacy, mental suffering, prenatal injury, and the role of strict liability.
Professor Glenn

389-611B INTERNATIONAL COMMERCIAL ARBITRATION. (2 hours, second term). A seminar dealing with the comparative evaluation of this particular alternative to litigation between parties to international contracts in Canada, the United States and the Common Market, with particular reference to international conventions and other instruments in this field.
Professor Groffier Atala

492-436A INTRODUCTION TO COMPARATIVE LAW. (2 hours, first term). Introduction to the comparative method; differences and similarities between the world's legal systems; a detailed study of selected topics. This is an undergraduate comparative law course offered in the Faculty.
Professor Hahlo

492-437A COMPARATIVE COMPANY LAW AND THE MULTINATIONAL COMPANY: LAW AND PRACTICE. (2 hours, first term). A comparative evaluation of Anglo-American and Continental company law systems — the harmonization of company laws within the European Common Market and the "European Company" — international and multinational companies — structure and management of the multinational company — government control of the multinational company — international controls and the multinational company — anti-monopoly legislation and the multinational company — the Canadian experience. This is an undergraduate comparative law course offered in the Faculty.
Professor Hahlo

Additional courses may be offered in September 1976. (See the Calendar Insert for the Faculty of Law.)

Requirements for Degree of Doctor of Civil Law

Candidates for the degree of Doctor of Civil Law must hold the degree of B.C.L. or LL.B. from McGill University or its equivalent from another university. As a rule a candidate who does not already hold a master's degree will be required to complete the master's degree before being accepted for the doctoral program. A candidate who has obtained the master's degree from another university will, as a rule, be required to complete the courses prescribed for the first year of the master's degree. If his or her performance is not of sufficiently high standard to justify admission to the doctoral program, he or she will not be permitted to proceed any further, but may be permitted to submit a master's thesis to qualify for the master's degree. If his or her performance is of sufficiently high standard, he or she may be permitted to proceed to the second year of the doctoral program without being required to submit a master's thesis.

The degree of Doctor of Civil Law is predominantly a research degree, and will be awarded on the basis of a thesis that represents an original contribution to the development of legal science. The thesis may be presented in English or French. All prospective candidates must present evidence of the subjects covered in their prior law studies and of their scholastic and professional standing together with two suitable references. The degree will be awarded, at the earliest, after the completion of three years from the first postgraduate registration of the candidate at McGill University. In the case of a candidate who holds the M.C.L. or LL.M. degree of McGill or its equivalent from another university, two years of resident study beyond the master's degree are required but may be reduced to one year with the approval of the Executive Committee of the Graduate Faculty on the recommendation of the Graduate Studies Committee of the Faculty of Law. In general, this non-resident year should be spent at another university or similar institution.

F8 DEPARTMENT OF POLITICAL SCIENCE

STAFF

Professors — MICHAEL BRECHER *(on leave Winter term 1976-77);* JAMES R. MALLORY; BALDEV NAYAR; CHARLES TAYLOR *(on leave 1976-77)*
Associate Professors — THOMAS BRUNEAU; PETER GOUREVITCH *(on leave 1976-77);* FRANK KUNZ *(Chairman);* DANIEL LATOUCHE; PAUL NOBLE; JANICE STEIN; MICHAEL STEIN; BLEMA STEINBERG; HAROLD WALLER
Assistant Professors — JEROME BLACK; BARABARA HASKEL; SAMUEL NOUMOFF; PHILIP SABETTI; HAROLD SARF; JOHN SHINGLER

This Announcement is prepared early in the calendar year and so is likely to need modification by the time the academic year begins. A mimeographed supplement is available at the Department Office, and it is essential for graduate students to consult this supplement in order to obtain a more complete description of the M.A. and Ph.D. programs

REQUIREMENTS

Admission

Students holding a B.A. degree may be eligible for admission. Preparation equivalent to a McGill Honours Program in Political Science is a desirable requirement. Students who have deficiencies in their preparation but are otherwise judged to be qualified are admitted to a qualifying year, in which they undertake advanced undergraduate work.

Normal deadline for applications for admission to the Department is February 15. Applications must be received by that time in order to guarantee the fullest consideration. All applicants, including those who have done their undergraduate work at McGill, must submit at least two letters of reference. Students are required to take the Graduate Record Eamination (aptitude test only) administered by the Educational Testing Service, Princeton, New Jersey. Applicants who mother tongue is neither French nor English should arrange for TOEFL scores to be sent to the Department. The department awards a number of teaching assistantships each year. The deadline for applications for these awards is March 1.

Requirements for the M.A. Degree

There are three requirements:

1. Seven one-term courses of which at least one must be a 700 level seminar; at least four of the courses must be at the graduate level in Political Science.
2. A written comprehensive examination in one of the following five fields: Political Philosophy, Comparative Politics (Developed Countries),

Comparative Politics (Developing Countries), Canadian Government and Politics, International Relations; or an Oral Admission Examination for those students wishing to proceed to the Ph.D. program.

3. A thesis to demonstrate proficiency in research.

Candidates for the M.A. degree follow a program approved on an individual basis by the Department. All students who wish to be considered for the Ph.D. program are evaluated on the basis of their M.A. program. Only a small number of students are permitted to go on for their doctorate. A pass for the M.A. degree does not necessarily imply permission to proceed to the doctorate.

Requirements for the Ph.D. Degree

There are six requirements:

1. Ph.D. students are required to take the equivalent of 6 one-term courses in addition to those they have taken at the M.A. level. Of these 6 courses, at least 3 must be at the 600 or 700 level in political science. By the time the student finishes his or her course work for the Ph.D., he or she must complete a total of at least three 700 level seminars in political science, including any taken in his M.A. year. The remaining courses may be chosen from among approved courses in Political Science or related disciplines, but should be at the graduate level whenever possible. With the approval of the Certification Committee, a student may take a reading course on some special subject as part of his or her program, providing he or she is able to find a faculty member who is willing to direct his or her work. Students should note that whereas 65% is the minimum passing grade, doctoral students are expected to maintain an average of at least 70%.
2. Students will be expected to do course work in three of the five fields offered by the Department. In two of these fields, the student will be required to write a comprehensive examination (see below), while in the third field the requirement will be met by the successful completion of two courses or seminars at the graduate level. In the third field the student must have his or her course program approved by the coordinator for the areas in which he or she is specializing.
3. Ph.D. students are required to take 2 written comprehensive examinations from among the following fields: (1) Canadian Government and Politics; (2) Comparative Politics (Developing Countries); (3) Comparative Politics (Developed Countries); (4) Political Philosophy; (5) International Relations. No student may write the comprehensives until he or she has completed his or her course work. The exams may be written together or separately. They are given each September, January and May.
4. Ph.D. students are required to take an oral comprehensive examination after they have passed their written comprehensives.
5. The student must pass an examination in unseen translation from two modern languages (other than English) at the elementary level or from one modern language (other than English) at the advanced level.
6. Dissertation.

COURSES FOR HIGHER DEGREES

160-601D M.A. GRADUATE GENERAL WRITTEN EXAMINATION.

160-612B EMPIRICAL METHODS. Fundamental principles of empirical research, in which the emphasis will be placed on acquainting the student with the techniques most commonly used by political scientists. The topics include the design of research projects, procedure in carrying out research, problems of measurement, survey research, scaling, data processing, and data analysis.
Professor Black

160-613A SELECTED THEMES IN POLITICAL PHILOSOPHY. This seminar will examine the political ideas of Francis Bacon, Thomas Hobbes and John Locke.
Professor Shingler

160-614A CLASSICAL POLITICAL THOUGHT. An examination of the origins of the Western tradition of political philosophy, with concentration on the major classical texts: Plato's *Republic* and *Laws;* Aristotle's *Politics* and *Nichomachean Ethics.*

160-615B POLITICAL PHILOSOPHY. A seminar on the 19th Century reaction in England to utilitarianism and the new industrial order. The works of Thomas Carlyle and John Ruskin will be the main texts.
Professor Shingler

160-616A MODERN POLITICAL ANALYSIS. An introduction to the concepts underlying modern approaches to the study of politics. The scope of the discipline will be delineated and the foundations of empirical research, including the philosophy and methodology of science, especially as these apply to social science, will be considered. Various alternatives and critiques will be presented and evaluated.
Professor Waller

* **160-617B PROBLEMS IN POLITICAL THEORY.** Analysis of selected themes in political theory drawing upon recent developments in contemporary philosophy and psychology. Topics will include: The concept of the self-other relation in theories of politics, the character of political action in contemporary political structures, functions of symbols and myths in political theory and action, and the study of various modes of exploring the human condition.
Professor Sarf

* **160-619B FUNDAMENTAL CONCEPTS OF POLITICAL THEORY.** This seminar will explore the philosophical and human foundations of political-theoretical activity, and consider political theory as a tradition. Questions concerning the nature of theoretical perception, the intentions which motivate political theorists, the different genre of theories, and the basic purposes, nature and forms of theory shall be considered. Both modern and classic texts will be used to explore the nature of theoretical discourse and the problematics of man and society to which political theory is a response.
Professor Sarf

160-621A THE CANADIAN POLITICAL PROCESS. An examination of conceptual problems and fundamental issues in the study of the Canadian political process. The topics include consensus versus conflict approaches, the Americanization of Canadian political science, behaviouralism versus post-behaviouralism, the consensual or class basis of political ideology and culture, the competitive or monolithic character of parties, groups and elites, the responsiveness and initiative of the legislature, executive and administration and the formation and effectiveness of public policy.
Professor M. Stein

157-626A TOPICS IN QUEBEC POLITICS: DIVERGING INTERPRETATIONS OF QUEBEC SOCIETY. The major theoretical models used to explain Quebec society: the historical school, the liberal interpretation, the Marxist view, the English-Canadian vision of Quebec. This course is particularly intended for those students who wish to acquire a general but theoretical background on Quebec. (A reading knowledge and a minimal ability to understand spoken French are required; writing and speaking ability are not required.)
Professor Latouche

* **157-627B EMPIRICAL STUDIES IN QUEBEC POLITICS.** This seminar is particularly intended for those students wishing to engage in more advanced research or some aspect of Quebec society (for example an M.A. thesis). Major themes of discussion will include ethnic and linguistic cleavages, independentism, federal-provincial relations, electoral studies. (A reading knowledge and a minimal ability to understand spoken French are required; writing and speaking ability are not.)
Professor Latouche

160-628A COMPARATIVE POLITICS. An analysis of differing models of the role of the state in bourgeois democratic political systems: the classical liberal view, the pluralist view, and the neo-Marxist views. The arguments will be studied through reading of both theoretical and empirical materials. Examples will be drawn from both West European and North American experience.
Professor Gourevitch

* **160-637B COMPARATIVE PUBLIC ADMINISTRATION.** This is an advanced course in the theories of public administration and the application to different systems in comparative perspective.

160-647A POLITICAL DEVELOPMENT. Review of theoretical and empirical literature on modernization and development; analysis of key elements in the development process — internal and external compulsions, social mobilization and institutionalization, economic development and social justice, integration; discussion of different models and strategies.
Professor Nayar

160-649A THE MASS APPROACH TO POLITICAL DEVELOPMENT: CHINA. An examination of the strategy of political and socio-economic development in contemporary China. Specific attention will be devoted to cultural and ideological foundations of socialization, mechanisms of policy adjustment, political and Party organization, decentralization, bureaucracy, and concepts such as telescoping of historic stages, goal motivation, and model emulation.
Professor Noumoff

160-660A STATE AND SOCIETY IN NON-DEMOCRATIC REGIMES. The purpose of this course is to analyze the development of political regimes in selected non-democratic states. The states will include Mexico, Peru, Spain, Zaire, and others which will be dealt with in a more general way. The analysis will be based on both Weber and Marx and will attempt to elaborate a conceptual apparatus for comparisons.

160-671B THE THEORY AND EXPERIENCE OF REGIONAL INTEGRATION. In 1976-77 the topic will be "Canadian-American Relations: International, Transnational or Integrated?" which will examine the relevant portions of the literature on integration and transnational relations in comparison to traditional inter-state relations in order better to understand the relations between Canada and the United States. The course will read theoretical material and case studies. Each student will choose a problem in Canadian-American relations and examine the applicability of the available framework to his case. Discussion of weekly readings and a seminar length paper will be expected.
Professor Haskel

160-675A INTERNATIONAL SYSTEMS. This course will examine some of the central problem areas in the study of international systems: stratification, interdependence, power and influence, conflict and conflict-management, alliances, international organization and integration.
Professor Noble

* **160-676A RESEARCH METHODS IN INTERNATIONAL RELATIONS.** (Prerequisite: 160-612A and either 160-678A or 160-679A). An advanced seminar designed for doctoral students. This course will examine alternative research strategies currently being used to explore major theoretical problems in international relations. Students will be expected to read several research projects in depth and to crit-

ically assess the advantages and disadvantages of their research design.
Professor J. Stein

160-677A INTERNATIONAL CRISES. A theoretical and comparative analysis of state behaviour under crisis conditions. Several approaches and methods will first be explored: neo-traditional; decision-making; stimulus-response; bureaucratic politics; event data; repetition-reaction; and systemic. Thereafter, with active student participation, in the form of a workshop, the course will compare several crises using the analytic framework of structured empiricism; 1914; Korean War (1950); Berlin (1948, 1961); Cuba (1962); Sino-India (1962); Indo-Pakistan (1965); Arab-Israel (1967-1973). Hypotheses on state behaviour will be tested with the evidence uncovered by these case studies.
Professor Brecher

160-678B STATE BEHAVIOUR. The seminar will examine theoretical and empirical studies of decision-making, the policy-making process, and foreign policy behaviour. The capacity of each approach to explain and evaluate choice and behaviour will be assessed.
Professor J. Stein

* **160-679A INTERNATIONAL CONFLICT.** An examination of the literature dealing with international conflict. Topics to be covered include the sources of international conflict, bargaining, strategies and dynamics of conflict, crisis behaviour, and the management of international conflict.

160-690A,B READING IN POLITICAL SCIENCE. A graduate student may take one reading course per academic year in a particular field and under the supervision of a member of staff.

160-700D Ph.D. ORAL ADMISSION EXAMINATION.

160-701D Ph.D. GRADUATE GENERAL WRITTEN EXAMINATION, First Field.

160-702D Ph.D. GRADUATE GENERAL WRITTEN EXAMINATION, Second Field.

SEMINARS

160-715B POLITICAL THEORY. A seminar in contemporary political science, with reference also to political philosophy and to the psychological bases and sociological affiliations of politics.

160-721A FEDERALISM. The seminar will deal in a comparative manner with the political problems of federal societies. Topics for discussion will include theories of federalism, conflict pluralism, federal constitutional traditions and institutional forms. Research will be conducted into selected aspects of Canada and other federal societies.
Professors Kunz, Mallory and M. Stein

* **160-724A AFRICAN POLITICS.** The seminar deals with selected problems in contemporary comparative African politics and political thought. The work of the seminar centres around research papers prepared and presented by participants.
Professor Kunz

* **160-726A CANADIAN LEGISLATURES.** The seminar will examine, in the light of recent research, the role of parliament and provincial legislatures in Canada in the policy-making process. Recent important changes in machinery (e.g. the expansion of committees) will be evaluated in the light of the changing character of Canadian politics and of questions of constitutional theory.
Professor Mallory

160-728B COMPARATIVE POLITICS. For students planning field research, particularly but not exclusively in Western Europe, Canada, and the United States. Training in use of primary source materials; discussion of examples of current work; consideration of research problems and designs. Students present their own projects.

160-731B POLITICAL IDEOLOGIES. This research seminar deals with selected problems of comparative political ideologies, their origins, functions and relationship to political action and institutions.
Professor Kunz

154-742B ECONOMIC AND POLITICAL DEVELOPMENT. This course will discuss the continuing Canadian problems of unemployment, inflation and foreign ownership, the Harrod question, "Are monetary and fiscal policies enough?", the necessary integration of all elements of economic policy including trade, exchange rate, competition, resource and growth objectives.
Professor Kierans

160-745B MACHINERY OF GOVERNMENT. This seminar will consist of a detailed examination of a problem in Canadian government and administration. Problems will include topics dealing with cabinet government, parliamentary organization, federalism, public administration and the impact of political forces on them.
Professors Mallory, Kierans and Weldon

160-747B RICH NATIONS AND POOR NATIONS: DEPENDENCE AND DEVELOPMENT. Research oriented seminar on the problems of dependence and development in the Third World.
Professor Nayar

* **160-748B SOUTH ASIAN POLITICS.** An investigation into key political problems of India and Pakistan in their social and economic setting.

* **160-749A ASIAN POLITICAL PHILOSOPHY.** A graduate seminar designed to permit students with some training in either Asia or Philosophy to examine either the historic or contemporary policy of East, South, South-East, or West Asia.
Professor Noumoff

* **160-778B COMPARATIVE ANALYSIS OF FOREIGN POLICY.** A research seminar dealing with

selected topics in foreign policy. Students will be expected to undertake original research from primary sources within their areas of interest.

160-779B COMPARATIVE ANALYSIS OF INTERNATIONAL CONFLICT. A research seminar devoted to the analysis of conflict in the contemporary international system.
Professor Noble

160-780A, 781B READING SEMINAR. A research seminar on a topic that is not covered in the regular seminars, but which is of interest to a group of students and a faculty member. The exact topic for the research papers will be determined by mutual agreement among students and faculty members involved.
Staff

160-799D Ph.D. ORAL COMPREHENSIVE EXAMINATION.

Undergraduate Courses for Qualifying Year and Graduate Students

When it is appropriate to his or her program, a graduate student may take an undergraduate course approved by his or her adviser. These courses are listerd in the *Announcement of the Faculties of Arts, Science* and in the annual course list prepared by the Department in the Fall.

F9 PSYCHOLOGY

STAFF

Professors — D. BINDRA *(Chairman)*; M.C. CORBALLIS; D.G. DOEHRING; VIRGINIA DOUGLAS; G.A. FERGUSON; R. KANUNGO W.E. LAMBERT; J. MACNAMARA; R.B. MALMO; R. MELZACK; BRENDA MILNER; P.M. MILNER; E.G. POSER; M.S. RABINOVITCH; MURIEL STERN
Emeritus Professor — D.O. HEBB
Associate Professors — A.S. BREGMAN; D.C. DONDERI; A.A.J. MARLEY; R.O PIHL; J.O. RAMSAY; T.R. SHULTZ; D. TAYLOR; G.R. TUCKER; N. WHITE; BLOSSOM WIGDOR; S. YULIS
Assistant Professors — FRANCES ABOUD; I.M. BINIK; SUSAN CAMPBELL; K. CLARK; M.S. CUMMINS; J. MacDOUGALL; C.L. OLSON; W.E. PIPER; J. WRIGHT; A. ZOLOVICK
Sessional Lecturer — ERIKA GUTBRODT
Lecturer — A. ROSNER
Clinical Consultants — S. BENAROYA; N. GREENBERG; P. GREGOIRE; G. NEMETH; A. PUTTERMAN

PROGRAMS

Graduate work in the Department of Psychology follows two main lines: experimental-theoretical and applied. Work in experimental-theoretical psychology leads to the M.A., M.Sc. and Ph.D. degrees in the psychology of human perception, cognition, learning and language, physiological, personality, social, child, psycholinguistics and quantitative psychology. Work in applied psychology leads to the Ph.D. degree in clinical psychology, and the M.Sc. (Applied) degree program is offered in certain particular fields.

Facilities for advanced research in a variety of fields are available within the Department itself. In addition, arrangements with the Departments of Psychology at the Allan Memorial Institute, Montreal Children's Hospital, Queen Mary Veterans' Hospital, the Douglas Hospital, and Jewish General Hospital, permit graduate students to undertake research in the hospital setting.

For full information about all programs, financial aid, and for application forms, contact the Graduate Admissions Secretary, Department of Psychology, McGill University, P.O. Box 6070, Station A, Montreal, Canada H3C 3G1. Telephone 392-5742.

REQUIREMENTS
Admission

Admission to graduate work will depend on an evaluation of the student's research interests and aptitude for original contributions to knowledge or for professional contributions in the applied field. The usual requirement for admission is an honours or majors degree (B.A. or B.Sc.) in Psychology. This includes an introductory course plus six full courses (each equivalent to six semester hours). Experimental psychology, the theoretical development of modern ideas in psychology, and statistical methods as applied to psychological problems (equivalent to an introductory course) are essential. A knowledge of elementary physiology, physics or chemistry, and modern developments in other related biological or social sciences is desirable. An applicant who holds a Bachelor's degree but who has not met these usual requirements should consult a faculty member in his or her area of interest to determine which (if any) courses must be completed before the application can be considered. A student with insufficient preparation for graduate work may register as a special student in the Faculty of Arts or the Faculty of Science, and follow an appropriate course of study. Such registration requires the permission of the Department and carries no advantage with respect to a student's eventual admission to graduate studies.

NOTE: Applicants should submit to the Graduate Admissions Secretary by February 1: a completed application form, two copies of the personal academic background form, two copies of all university transcripts, two or more letters of recommendation, Miller Analogies and/or Graduate Record Examination scores, and a personal letter, outlining their experience, interests and objectives in psychology. Applicants should note that the deadline for many scholarships and fellowships is two to three months earlier than the February deadline.

Requirements for the M.A. and M.Sc. Degrees

Candidates must demonstrate a sound knowledge of modern theory, of its historical development, and of the logic of statistical methods as used in psychological experiment. They will be expected to have an understanding of the main lines of current work in other than their own particular field of specialization.

All candidates must take courses 204-650A, 204-650B and 204-660D, and in addition any other course specified by the Department. The primary concern of the candidate, however, is the thesis. A general comprehensive written or oral examination will be held which, in conjunction with the thesis itself, will determine the candidate's final standing for the degree.

Requirements for the Ph.D. Degree

The candidate for the Ph.D. degree in the theoretical-experimental program must demonstrate a broad scholarship, mastery of current theoretical issues in psychology and their historical development, and a detailed knowledge of his or her special field. A special comprehensive examination is written in one of the following: comparative and physiological psychology, learning and perception, social psychology and personality, measurement, developmental psychology, or any other appropriate area.

Candidates for the Ph.D. degree in clinical psychology must demonstrate a high standard of scholarship in psychology and aptitude for the professional application of psychological knowledge. The clinical program is designed primarily to train senior personnel for work in hospitals and clinics. A number of avenues of specialization are, however, possible. Some students may wish to prepare themselves for careers in university teaching or clinical research; others may have an interest in behaviour disorders in the fields of developmental or educational psychology. The time necessary to attain the degree is four years beyond the B.A. or B.Sc. degrees. No intermediate or terminal M.A. or M.Sc. degrees are awarded to students in the Ph.D. clinical program. All students are required to write a thesis and demonstrate research capabilities.

The Department of Psychology does not ordinarily require an examination in a foreign language.

COURSES AND SEMINARS

204-454D LABORATORY METHODS IN PSYCHOBIOLOGY.

204-455D RESEARCH METHODS IN PSYCHOLINGUISTICS.

204-601D Reference number for comprehensive examination written by candidates for the M.A., M.Sc., or M.Sc. (Appl.) degree.

204-615D INTELLIGENCE AND PERSONALITY. (3 hours).

204-630A PSYCHOPATHOLOGY. (1½ hours).

* **204-635D ADVANCED EDUCATIONAL PSYCHOLOGY.** (3 hours).

204-640D DESIGNING, DEVELOPING AND EVALUATING INSTRUCTIONAL SYSTEMS. (3 hours).

204-641D BEHAVIOUR DEVIATIONS. (3 hours). Appraisal and Modification.

204-650A ADVANCED STATISTICS I. A course in advanced statistics with specialization in experimental design. (3 hours).

204-651B ADVANCED STATISTICS II. A course in advanced statistics with specialization in regression techniques. (3 hours).

204-660D PSYCHOLOGICAL THEORY. (3 hours). Seminar designed as an introduction to more advanced graduate courses.

204-670D RESEARCH PROBLEMS IN CLINICAL PSYCHOLOGY. (1 hour).

204-701D Reference number for comprehensive preliminary Ph.D. examinations.

204-702F SUMMER INTERNSHIP — JUNIOR.

204-703F SUMMER INTERNSHIP — SENIOR.

204-704D SPECIALIZED PRACTICUM.

204-705D Reference number for research project of M.Sc. (Appl.) candidates.

204-710 to 715 COMPARATIVE & PHYSIOLOGICAL PSYCHOLOGY. (2 hours).

204-716 to 721 LEARNING AND MOTIVATION. (2 hours).

204-722 to 727 PERSONALITY AND SOCIAL PSYCHOLOGY. (2 hours).

204-728 to 733 CLINICAL PSYCHOLOGY. (2 hours).

204-734 to 739 DEVELOPMENT AND LANGUAGE. (2 hours).

204-740 to 745 PERCEPTION AND COGNITION. (2 hours).

204-746 to 751 QUANTITATIVE AND INDIVIDUAL DIFFERENCES. (2 hours).

F10 DEPARTMENT OF SOCIOLOGY

STAFF

Professors — DAVID N. SOLOMON *(Chairman)*; RICHARD HAMILTON; MAURICE PINARD; WILLIAM A. WESTLEY

Associate Professors — MICHAEL P. CARROLL; ROGER G. KROHN; GERTRUDE ROBINSON; DONALD VON ESCHEN
Assistant Professors — WILLIAM W. EATON; JOSEPH LELLA; ULI LOCHER; PRUDENCE RAINS *(on leave 1976-77)*; MICHAEL SMITH; MALCOLM SPECTOR
Visiting Assistant Professor — HENRY LESIEUR

REQUIREMENTS

The Department offers training leading to the degrees of Master of Arts and Doctor of Philosophy in Sociology. For admission to candidacy, applicants must have a Bachelor's degree based upon a record of at least second class standing. The degree may be either in Sociology — in which case it should be equivalent to the honours B.A. degree at McGill — or it may be in another relevant social science. In the latter case, the applicant may be required to take some additional Sociology courses to fill gaps in his or her background. For a detailed description of courses open to graduate and undergraduates, and of preparation required of McGill University honours students, candidates should consult the Announcement of the Faculties of Arts, Science.

ADMISSION

For an application to be considered, it is essential that applicants submit with their applications the results of the Aptitude Test of the Graduate Record Examination. In addition, applicants who have specialized in Sociology and who wish to be considered for admission directly into the one-year M.A. program or into the Ph.D. program must also submit the results of the Advanced Test in Sociology of the Graduate Record Examinations. Arrangements to take these examinations should be made directly with the Educational Testing Service, Box 955, Princeton, New Jersey 08540, USA.

In addition, each applicant is asked to submit two letters of recommendation and a transcript of his/her university-level grades along with examples of his/her written work. The deadline for completed applications is March 1.

Candidates who lack sufficient preparation in the social sciences, but whose academic record justifies eventual admission to the graduate program, must register for a qualifying year during which they are required to take courses to widen their knowledge of Sociology. These courses are normally those which are open to graduate and undergraduate students. Candidates must achieve at least second class standing in these courses and an average across all courses of at least 75%; in general, they must, in the opinion of the Department, have achieved sufficient preparation in the subject matter of Sociology before they will be allowed to proceed further into graduate work. Courses in statistics, research methods and sociological theory are required of all qualifying candidates.

A number of teaching and research assistantships are available to qualified graduate students. Students who wish to be considered for such assistantships should inform the Graduate Adviser of the Department. In most circumstances, students who accept assistantships may expect to spend longer than the minimum time to complete their degrees.

REQUIREMENTS FOR THE M.A. DEGREE

The program of study is designed to give the candidate an advanced understanding of some major fields of Sociology and to provide him/her with research experience through the preparation of a short thesis. A minimum of one year of graduate study is required. The program will normally include three courses per term. For some candidates, additional courses may be required if, in the opinion of the Department, the candidate lacks sufficient preparation. A thesis is required of all candidates. In addition, candidates are required to demonstrate a knowledge of some particular area in Sociology by passing an examination in that area.

Further details about the requirements are available and can be obtained from the Graduate Secretary in the Department.

Requirements for the Ph.D. Degree

A minimum of three years of study is required. The first year of the Ph.D. program is identical with the program for the M.A. degree. Admission to study for the Ph.D. degree is therefore usually granted to students only after they have attained the M.A. degree in Sociology with high standing. They are then permitted to proceed to the Ph.D. degree in two further years of study subject to the examination, language and thesis requirements mentioned below. Only students who are very well prepared can expect to complete the total program in the minimum time.

An applicant who has received a master's degree at a university other than McGill should submit a copy of his/her thesis or evidence of equivalent research experience with his/her application for admission.

Examination Requirements

Candidates must take four examinations. These will include examinations in:

(1) sociological theory, and
(2) three of the special fields of Sociology

One of these special fields can be that on which the candidate was examined in the M.A. program if that examination was passed with distinction.

These examinations must be completed and the student's candidacy for the degree established no later than the end of the third year of graduate study.

Language Requirement

Candidates must demonstrate ability to read French with high proficiency or to read another language

which is relevant to the candidate's field of research. The language requirement should be met by the end of the third Ph.D. year.

Thesis Requirement

Candidates are required to submit a thesis on an approved topic. Approval of the topic will usually follow submission of a research proposal. Further details on the requirement and regulations for theses and for the fields in which the Department is prepared to direct research may be obtained from the Graduate Secretary of the Department.

COURSES AND SEMINARS

All 300, 400 and 500 level courses listed in the Faculty of Arts announcement are open to graduate students as preparation and recommended prerequisites for participation in research seminars. Students must complete a 300 or 400 level course or its equivalent in a subject area as a prerequisite for a seminar in that area.

166-503A SEMINAR: THEORETICAL PARADIGMS IN SOCIOLOGY.
Professor Carroll

166-504B SEMINAR: QUANTITATIVE METHODS OF SOCIAL RESEARCH.
Professor Eaton

166-552B SEMINAR: CURRENT SOCIOLOGICAL THEORY.
Professor Krohn

166-615B SEMINAR: THE SOCIOLOGY OF MEDICINE.
Professor Solomon

* **166-618A SEMINAR: THE SOCIOLOGY OF WORK.**
Professor Westley

* **166-620A SEMINAR: SOCIAL MOVEMENTS.**
Professor Von Eschen

166-622A SEMINAR: PROBLEMS IN MASS COMMUNICATIONS.
Professor Robinson

166-625B SEMINAR: INDUSTRIAL SOCIOLOGY: THE ORGANIZATION OF PRODUCTION.
Professor Smith

166-627A SEMINAR: POLITICAL SOCIOLOGY.
Professor Hamilton

* **166-631B SEMINAR: CORPORATIONS AND SOCIETY.**
Professor Ehrensaft

166-640A SEMINAR: QUALITATIVE METHODS OF SOCIAL RESEARCH.
Professor Westley

* **166-661B SEMINAR: SOCIOLOGY OF KNOWLEDGE.**
Professor Krohn

166-670B SEMINAR: COMPARATIVE URBANIZATION IN THE THIRD WORLD.
Professor Locher

166-671B SEMINAR: DEVIANCE AND SOCIAL CONTROL.
Professor Spector

* **166-672B SEMINAR: SOCIAL CHANGE.**
Professor Wallerstein

* **166-680D SEMINAR: APPLIED SOCIOLOGY AND ALTERNATIVE ORGANIZATIONS.**
Professors Smith and Westley

166-681D SEMINAR: COLLEGIUM ON SOCIAL MOVEMENTS.
Professors Pinard and Von Eschen

* **166-682B SEMINAR: ECONOMIC SOCIOLOGY.**
Professors Krohn and Ehrensaft

* **166-683D SEMINAR: WORLD SYSTEM.**
Professors Wallerstein and Ehrensaft

* **166-684D SEMINAR: DEVIANCE AND THE LABELING PERSPECTIVE.**
Professors Rains and Spector

166-720A,B READING IN SOCIAL THEORY.
Staff

166-730A,B READING AND RESEARCH.
Staff

109-610D SEMINAR: THEORIES OF COMMUNICATION. (See English Department for description.)
Professors Crowley and Theall

* **110-671A SEMINAR: DESIGNING EFFECTIVE COMMUNICATION.** (See English Department for description.)
Professor Hillgartner

**Not given 1976/77.*

McGill University

Faculty of Graduate Studies and Research 1976 — 77

Section "G"
Education

NOTE: Courses marked with an asterisk (*) are not offered in 1976-77. The letters, which form part of course numbers, have the following significance:
A — Fall term course
B — Winter term course
L — Summer session part I course
C — Summer session part II course
D — Full session course (Fall and Winter terms)
E — Combined Winter and Summer term course
G — Combined Summer and Fall term course

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* The official McGill University mailing address is:
McGill University, P.O. Box 6070, Station A
Montreal, Quebec, Canada H3C 3G1

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G1 EDUCATION

STAFF

Professors —G. FLOWER *(Dean);* L.B. BIRCH *(Macdonald Professor of Education);* R. MAGNUSON *(Director of Graduate Studies);* R. EDWARDS;T.A. FRANCOEUR; V. KLISSOURAS; M. GILLETT; G.H. McKAY; E. PEDERSEN; D.C. SMITH; H.A. STUTT; R.E. WILKINSON

Associate Professors — M. BAIN; D.A. BURGESS *(Associate Dean);* M. BURNS; M. BUTEAU; G. CARTWRIGHT; J. CHOMAY; J.M. CRAM; F. DUMONT; R. EARLE; W. FLOCH; M. FRITH; P. FRANCOEUR; G. GEIS; F.P. GREENE; G. GROEN; J.K. HARLEY; J. HARRIS; N. HENCHEY; THE REV. J.P. HILTON *(Associate Dean);* A. HUM; G.B. ISHERWOOD; J.K. JOBLING; P. LANDRY; R. LAVERS; H. LEARD; J.P. LIPKIN; K. MACONOCHIE; G. MAGER; D.Q. MARISI; T. MAROUN; D. PARE; C. PASCAL; F. PINTO; S. RAPAGNA; W. SEALRES; B.M. SHORE; D. SOKOLYK; F. STINSON; R. TALI; W.M. TALLEY; G. TERROUX; R. WHITWELL; J. WOLFORTH

Assistant Professors — L. BUTLER-KISBER; N.G. COCCALIS; J. DONALD; T.O. EISEMON; R. GARDNER; W. GOODMAN; M. GREENISEN; J. HAMWOOD; J. HANRAHAN; C. LUCAS; C. LUSTHAUS; N. McCARDELL; D. MONTGOMERY; G.I. NEIL; S. NEMIROFF; J. REBUFFO; H. SHANTZ; G. TORBIT; R. TOWNSEND; A.E. WALL; M. WESTWOOD.

GENERAL INFORMATION

The Faculty of Education offers programs leading to M.A., M.Ed. and D.Ed. degrees. Applicants should be advised that such degrees do not confer certification to teach in the Province of Quebec.

The M.A. degree provides opportunities for suitably qualified teachers and other professionals to deepen their knowledge and to gain some facility in research in a major area of education. At present the areas in which students may elect to specialize are Educational Administration, Comparative Education, Educational Psychology, Counsellor Education, Physical Education and History and Philosophy of Education. Students complete their degree work by submitting a thesis in the area of their specialization.

The structure of the M.Ed. degree is different since its purpose is to enable candidates to gain added competence in a professional field, e.g., Educational Administration, Counsellor Education, Reading, Special Education, or in the teaching of a specific school subject. Programs leading to M.Ed. degrees in teaching subjects are offered in Biology, Chemistry, Physics, Mathematics, Geography, History, Home Economics and French as a Second Language, and English as a Second Language. Awaiting university approval is an M.Ed. degree in Educational Psychology. The thesis is not a requirement of the M.Ed. programs, though students in the teaching subject programs are required to submit a monograph, and others may be asked to serve a period of internship.

The Faculty has one formal doctoral program. This is a professional degree in Counsellor Education which is intended to enable selected students who have already attained the level of the M.Ed. in Counsellor Education to continue their studies in breadth and depth and to carry out a significant inquiry to be reported as a doctoral thesis.

At present the Faculty of Education does not offer a formal program leading to a Ph.D. However, under the Regulation set out in paragraph 22 of the Announcement of the Faculty of Graduate Studies and Research it is possible for exceptionally well qualified candidates to proceed to the degree of Ph.D. by making direct application to the Dean of the Faculty of Graduate Studies and Research. Such candidates should have a very clear idea at the outset of the area of their prospective research. Currently the Departments of Social Foundations of Education, Educational Psychology, Educational Administration and English (Reading) have doctoral students under this provision. It should be noted that a Ph.D. in Educational Psychology and a D.Ed. in Educational Administration are in the developmental stage.

Entrance Requirements for M.A. and M.Ed. Degrees

For most programs, candidates must hold an undergraduate degree from a recognized university, with second class standing in at least one continuation subject, and also a Permanent Quebec Teaching Diploma, or its equivalent, with a second class standing. Exceptionally well-qualified candidates may sometimes be admitted to masters' programs in certain departments before they have completed the two years of probationary teaching. Teacher certification requirements may be waived for candidates applying for the M.A. program in Physical Education and Social Foundations of Education and for the M.A. or M.Ed. in Counsellor Education.

Most departments have additional entrance requirements which may be found in the entries of individual departments.

Length of Study for M.A. and M.Ed. Degrees

Most programs can be completed by full time or half time study or by a mixture of both. A Summer Session program is offered but it is not normally possible to complete degrees wholly by summer attendance.

All masters' degrees in the Faculty of Education take at least two years of full time study, or the equivalent in Summer Session and part time work, to complete.

Entrance Requirements for D.Ed. Degree in Counsellor Education

Candidates for the Doctoral program in Counsellor Education must hold the degree of M.Ed. (Counsellor Education) of McGill University, or its equivalent,

and have maintained good second class standing in the degree. In addition applicants for the program must supply personal and educational data, take prescribed tests and engage in an interview procedure. For otherwise acceptable candidates who do not meet the academic requirements, courses of qualifying study may be prescribed.

There is no second language requirement.

Length of Study for D.Ed. Degree in Counsellor Education

A minimum period of two years of full time study, including the summer session between the two academic years, is required to fulfill the residency requirement for this degree. A maximum period of seven years may elapse between entrance into the program and the reception of the degree.

Fees

Students must register every year and must be registered for the Session in which they graduate. For tuition fees see the General Information and Faculty Regulations Section.

Applications

Applications for admission to the Faculty of Graduate Studies and Research for degrees in Education should be made to the *Director of Graduate Studies, Faculty of Education, McGill University, 3700 McTavish St., Montreal H3A 1Y2, P.Q.* Summer session and Winter session candidates in Counsellor Education, Educational Administration, and M.Ed. in Special Education are required to apply by March 1. Other candidates applying for admission for the first time and wishing to start in the Summer session must apply before April 1, and those interested in commencing studies in the fall must apply by July 3. Applications in some programs will close prior to these deadlines when all places have been filled.

NOTE: Admission to the Faculty of Graduate Studies and Research for graduate programs in Education is made by the Dean of the Graduate Faculty on the basis of the undergraduate record and satisfactory professional training. Admission to the appropriate courses is made by the individual departments of the Faculty of Education, and where appropriate, by the departments concerned in other Faculties in consultation with the Faculty of Education.

KEY SESSIONAL DATES

August 16	Deadline for submitting doctoral thesis for Fall Convocation.
August 23	Deadline for submitting masters' thesis for Fall Convocation.
September 13	Lectures begin, first term.
November 9	Convocation.
December 10	Lectures end, first term.
January 14	Registration.
January 17	Lectures begin, second term.
March 14	Deadline for submitting doctoral thesis for Spring Convocation.
March 21	Deadline for submitting masters' thesis for Spring Convocation.
April 15	Lectures end, second term.

DEPARTMENT OF COUNSELLOR EDUCATION

Professor — FLORENT DUMONT (Chairman)

M.A. Counsellor Education

Additional Entrance Requirements

1) Normally, the first step is to secure an interview with the Chairman of the Department. This may be waived for prospective students residing at a great distance from the University.
2) Additional forms must be filed for admission to the Department
3) Each student is required to take a battery of standardized tests including the Miller Analogies Test and the Graduate Record Examination (Verbal and Quantitative elements). Requirements may be waived for certain applicants. The Department Chairman will inform applicants further during their interviews.

PROGRAM REQUIREMENTS

Studerts are required to complete the equivalent of ten haf courses in addition to thesis preparation (414-621D) and a thesis. The equivalent of three half courses may be selected by the student within the corstraints presented below.

Required Courses

The following courses are offered by the Department of Educational Psychology.

414-602D THE USE OF STATISTICS IN EDUCATIONAL PROCEDURES.

414-621D THESIS PREPARATION. This course is offered jointly by the Departments of Educational Psychology and Counsellor Education.

The following courses are described in the M.Ed. Counsellor Education program.

412-602A,B PHILOSOPHY OF GUIDANCE. (Half Course).

412-603A,B THEORIES OF PERSONALITY. (Half Course).

412-605A,B INTRODUCTION TO THEORIES IN COUNSELLING. (Half Course).

412-640A,B ADOLESCENT DEVELOPMENT. (Half Course).

412-641A,B PSYCHOLOGICAL TESTING. (Half Course).

Optional Courses

With the approval of the Department, students must elect one half course from the Department of Counsellor Education and one full course from the Faculty of Education or other Faculties of the University.

M.Ed. Counsellor Education

The Department offers three majors: Elementary School Counselling, Secondary School Counselling and Student Personnel Services (College and University). Each applicant must select a major when applying.

Additional Entrance Requirements

1) Normally, the first step is to secure an interview with the Chairman of the Department. This may be waived for prospective students residing at a great distance from the University.
2) Additional forms must be filed for admission to the Department.
3) Each student is required to take a battery of standardized tests including the Miller Analogies Test and the Graduate Record Examination (Verbal and Quantitative elements). These requirements may be waived for certain applicants. The Department Chairman will inform applicants further during their interviews.

PROGRAM REQUIREMENTS

Students who are certified teachers or who have the equivalence in professional background must complete the equivalent of six full courses. In addition to this they must spend one year in a supervised internship. The Department prefers that the program be undertaken, normally, on a full-time basis. For those students who are not teachers, nor intend to work in a school setting, an additional two full courses are required which are to be taken within the Faculty of Education.

Required Courses Common to All Three Majors

412-602A,B PHILOSOPHY OF GUIDANCE. (Half Course). Philosophical foundations of guidance; history, growth, and recent trends of the guidance movement. Orientation to the field in respect to the functions, scope, organization, and administration of counselling services.

412-603A, B THEORIES OF PERSONALITY. (Half Course). Study and comparison of contemporary theories of personality. Emphasis upon theories having significance for counselling and assessment principles. Recent research in personality theory.

412-604A,B DYNAMICS OF GROUP WORK. (Half Course). Study of group organization, with opportunity to develop skills in group leadership. Interpretation of group interaction and typical roles played by members in groups.

412-605A,B INTRODUCTION TO THEORIES IN COUNSELLING. (Half Course). Correlation and interpretation of counselling data and the study of individual cases. Emphasis on the process in counselling, the counselling relationship, and counselling techniques.

412-611A,B INDIVIDUAL TESTING. (Half Course). This course is intended to make the student familiar with the individual tests in common use and to give him some degree of proficiency in their application. Special emphasis will be placed on the Binet and Wechsler scales. There will be opportunities for diagnostic testing under supervision.

414-610A,B, EDUCATIONAL MEASUREMENT. (Half Course). See M.A. Educational Psychology.

Required Courses in Elementary School Counselling Major

412-620A, ADVANCED CHILD PSYCHOLOGY. (Half Course). Study of the growing person from birth to pre-adolescence with emphasis on the background and methods as well as research on the principles of child development, disturbances in child development, various areas of development, and characteristics of different age levels.

412-621A,B PSYCHOLOGICAL TESTING IN THE ELEMENTARY SCHOOL. (Half Course). Group testing in the elementary school, including readiness, reading, diagnostic, intelligence, interest, aptitude, and other tests.

* **412-622A,B TRENDS IN ELEMENTARY SCHOOL COUNSELLING.** (Half Course). Social, psychological, educational factors in vocational development of elementary school children. Implications of the elementary curriculum for career planning and decision making. Functions, relationships, organization, and administration of guidance in elementary education.

* **412-623A,B INTRODUCTION: THE EXCEPTIONAL CHILD.** (Half Course). Nature, identification, cause, and treatment of children's disabilities and their influence on emotional, social, educational, and vocational adjustment. Special services required for exceptional children to develop to their maximum capacities.

412-625A PRACTICUM IN ELEMENTARY SCHOOL COUNSELLING. Practices in counselling Adapting to counselling sessions person to person, educational, occupational, and social relationships. Practice with individual cases.

412-626B PRACTICUM IN ELEMENTARY SCHOOL COUNSELLING. (See 412-625A for description).

412-639D INTERNSHIP IN ELEMENTARY SCHOOL COUNSELLING. (One Full Year). Study, observation, and practice at respective levels in selected settings; integration of theory and practice

through Faculty supervision of experience, group seminar, and individual conferences.

Required Courses in Secondary School Counselling Major

412-640A,B ADOLESCENT DEVELOPMENT. (Half Course). Normal development of adolescents through young adulthood. Problems and concerns of adolescence which occur with physical, social and personal development, in the context of family and school adjustment.

412-641A,B PSYCHOLOGICAL TESTING. (Half Course). Theory and application of group tests appropriate for adolescents and adults. Specific instruments; intelligence, aptitude, interest and personality, analyzed in terms of basic concepts, reliability, validity, and practical utilization.

412-642A,B INFORMATION SERVICES IN THE SECONDARY SCHOOL. (Half Course). Procedures and systems of utilizing and communicating social, educational, and occupational information and materials. Structure of occupations; theories of vocational development.

412-663A,B ORGANIZATION AND ADMINISTRATION OF SCHOOL PERSONNEL SERVICES. (Half Course). The functions, relationships, organization, and administration of guidance services in the secondary school and student personnel services.

412-645A PRACTICUM IN SECONDARY SCHOOL COUNSELLING. (See course description for 412-625/626).

412-646B PRACTICUM IN SECONDARY SCHOOL COUNSELLING. (See above).

412-659D INTERNSHIP IN SECONDARY SCHOOL COUNSELLING. (One Full Year). See course description for 412-639D in the Elementary School Counselling Major.

Required Courses in Student Personnel Services Major

412-640A,B ADOLESCENT DEVELOPMENT. (Half Course). See course description in Secondary School Counselling Major.

412-641A,B PSYCHOLOGICAL TESTING. (Half Course). See course description in Secondary School Counselling Major.

412-662A,B INFORMATION SERVICES IN STUDENT PERSONNEL WORK. (Half Course). See course description for 412-642A,B in the Secondary School Counselling Major.

412-663A,B ORGANIZATION AND ADMINISTRATION OF SCHOOL PERSONNEL SERVICES. (Half Course). See course description in Secondary School Counselling Major.

412-665A PRACTICUM IN STUDENT PERSONNEL COUNSELLING. (See course description for 412-625/626).

412-666B PRACTICUM IN STUDENT PERSONNEL COUNSELLING. (See above).

412-679D,E,F,G INTERNSHIP IN STUDENT PERSONNEL COUNSELLING. (One Full Year). See course description for 412-639D in the Elementary School Counselling Major.

NOTE: The program more than meets the requirements for admission to membership of the Professional Corporation of Guidance Counsellors of Quebec.

D.Ed. COUNSELLOR EDUCATION

The Department offers three majors: Elementary School Counselling, Secondary School Counselling and Student Personnel Counselling (College and University). Each applicant must select a major when applying.

The offerings in the doctoral program consist of courses in three areas: Foundations of Education, Related Disciplines, and Counselling Psychology.

Additional Entrance Requirements

1) Normally, the first step is to secure an interview with the Chairman of the Department. This may be waived for prospective students residing at a great distance from the University.
2) Additional forms must be filed for admission to the Department.
3) Each student is required to take a battery of standardized tests including the Miller Analogies Test and the Graduate Record Examination (Verbal and Quantitative elements). This requirement may be waived for certain applicants. The Department Chairman will inform applicants further during their interviews.

PROGRAM REQUIREMENTS

1) Two full courses in Foundations of Education unless they have the equivalents in their backgrounds.
2) One full course in a related discipline in the University.
3) The equivalent of five full courses in the area of their specializations.
4) One year of field work (412-679D,E,F,G)
5) A comprehensive examination (412-701D).
6) A thesis.

Foundations of Education

Each candidate, in consultation with the Department, will select a minimum of two courses from the following:

† **411-642D DEVELOPMENT AND ADMINISTRATION OF THE SCHOOL CURRICULUM.**

† **413-617D HISTORICAL FOUNDATIONS OF CONTEMPORARY EDUCATION.**

† **413-627D PHILOSOPHIC ANALYSIS OF THE PROBLEMS OF EDUCATION.**

† **44-635D STUDIES IN EDUCATIONAL PSYCHOLOGY: LEARNING AND INTELLIGENCE.**

†Descriptions for these courses may be found in the programs of the appropriate Departments.

Related Disciplines

Each candidate, in consultation with the Department, will select one or more full courses from offerings in related disciplines available in the University.

Counselling Psychology

All candidates will take the following courses unless they have had their equivalent.

* **412-620A,B ADVANCED CHILD PSYCHOLOGY.** (Half Course). Study of the growing person from birth to pre-adolescence with emphasis on the background and methods as well as research on the principles of child development, disturbances in child development, various areas of development, and characteristics of different age levels.

* **412-709D ADVANCED THEORY: COUNSELLING MODELS AND SYSTEMS AND SMALL GROUP COUNSELLING.** Advanced study of the counselling relationship and process with comparison between the contemporary models and systems. Emphasis on the phenomenological, behavioural and analytic models; research findings relative to these models and implications for counselling practice. Applicability of these models to small group counselling, including methods and problems of groups in counselling; research studies and analysis of small group interaction.

412-710A,B THE DISORGANIZED PERSONALITY. (Half Course). Nature of disorganized behaviour and the adjustment process; adjustment and learning; variety of adjustment reactions; major adjustment mechanisms; the effect of unconscious psychological processes upon behaviour; consideration of the implications for counselling.

* **412-711D ADVANCED METHODS OF EDUCATIONAL STUDY AND RESEARCH DESIGN.** Statistical methods as applied to educational data and problems are systematically studied, including topics such as: correlation and regression, analysis of variance, and other tests of significance including selected non-parametric techniques. Training is given in identifying research problems and organizing useful means for research, and interpreting and reporting observed phenomena.

Required Courses in Elementary School Counselling Major

* **412-717D SEMINAR: INDIVIDUAL ANALYSIS AND PROGRAMS FOR EXCEPTIONALITY.** Advanced study of diagnostic instruments, with emphasis upon the analysis, interpretation, and integration of all pertinent data; use of projectives, especially in play activities; implications for learning and adjustment problems of the elementary school child.

Identification and needs of exceptionality; special emphasis on programs that have been developed from the education of the exceptional child; study of relevant research dealing with the physical, mental, emotional, and social traits of all types of exceptional children

* **412-787D SEMINAR: RESEARCH PROBLEMS IN ELEMENTARY SCHOOL COUNSELLING.** The seminar will consist of supervised study of selected topics for the particular option selected. These will be reported on in the seminar and their implications for research discussed. Current research and professional problems in counselling common to all levels will be covered with emphasis on recent literature. Some of these problems are: unified philosophy of the field, ethics of the profession, and legal responsibilities.

412-797D SUPERVISED FIELD WORK IN ELEMENTARY COUNSELLING. (One Full Year). Study, observation, and practice at respective levels in selected settings; integration of theory and practice through supervision of experience, group seminar and individual conferences.

Required Courses in Secondary School Counselling Major

* **412-720D SEMINAR: CAREER DEVELOPMENT THEORY, PHILOSOPHY AND ORGANIZATION OF EDUCATIONAL PERSONNEL SERVICES.** Contributions of contemporary career theories to the understanding of the processes and the determinants of career choice and adjustment; life stages and career patterns in personal and vocational development; study of selected problems, designs and outcomes of research in career development.

Analysis of the inter-related functions of all types of specialized student personnel workers with particular reference to their role in the total educational program, such as: admission practices, social systems, provision for advisement and counselling, student activities and self-government, administration of financial aid, faculty-student relations, and the principles governing the scope of such services and adapting them to educational institutions of various sizes and levels.

412-789D SEMINAR: RESEARCH PROBLEMS IN SECONDARY SCHOOL COUNSELLING. See course description for 412-787D in the Elementary School Counselling Major.

412-796D SUPERVISED FIELD WORK IN SECONDARY SCHOOL COUNSELLING. (One Full Year). See course description for 412-797D in the Elementary School Counselling Major.

Required Courses in Student Personnel Counselling Major

* **412-720D SEMINAR: CAREER DEVELOPMENT THEORY, PHILOSOPHY AND ORGANIZATION OF EDUCATIONAL PERSONNEL SERVICES.** See course description in Secondary School Counselling Major.

* **412-788D SEMINAR: RESEARCH PROBLEMS IN STUDENT PERSONNEL SERVICES.** See course description for 412-787D in the Elementary School Counselling Major.

412-798D SUPERVISED FIELD WORK IN STUDENT PERSONNEL SERVICES. (One Full Year). See course description for 412-797D in the Elementary School Counselling Major.

Candidates having special interests and needs not met by other available courses may register for the following:

412-770D INDIVIDUAL READING. Candidates may, with the consent of the Department, elect this individual reading and conference course in lieu of one of the above courses.

Required for all Doctoral students.

412-701D COMPREHENSIVE EXAMINATION.

DEPARTMENT OF EDUCATION IN ENGLISH

Professor — J.M. O'HARA (Chairman)

M.Ed. Teaching of Reading

Professor — F.P. GREENE *(Program Director);* R.A. EARLE, *(Associate Program Director)*

Additional Entrance Requirements

1) The candidate must demonstrate familarity with the procedures commonly used in the teaching of reading. This requirement will normally be met by possessing a Reading Diploma from McGill or its equivalent. Before applying, interested persons are strongly encouraged to meet one of the staff to talk over the program. Call 392-8888 for an appointment or write the Reading Centre.
2) The candidate's undergraduate record must show a suitable concentration in English, Psychology or Education. Work record must show appropriate experiences of both regular classroom and reading or other special settings.
3) Four letters of recommendation are required: two from past university level instructors; one from an education supervisor; one from the candidate indicating knowledge of the program, personal goals and any additional information which might be helpful to the decesion committees.
4) Applications will close each spring as space in the program is filled.

Program Requirements

Students are required to complete the equivalent of eight full courses. Six required courses are listed below. The course 427-670D covers the work done in completing the M.Ed. paper. The final two courses are selected by the student with the approval of the Department. See comments under **Options** for further details.

Required Courses in Reading

427-665D ADVANCED STUDY OF READING INSTRUCTION. Principles, approaches, techniques and materials for teaching reading in the Elementary and Secondary School within the context of total language development; stimulation of desirable reading habits and tastes, provision for individual differences, evaluation and reporting of pupil progress; observation of effective practices in schools.

427-666D AND 427-667D. DIAGNOSIS AND TREATMENT OF READING DISABILITY. (Two related and sequential full courses which cannot be taken separetely.) Causes, diagnosis and treatment of reading disability including neurological, physiological, psychological and social factors; use of diagnosis instruments, construction of informal diagnosis measures; observation of diagnosis and treatment in schools, clinics and hospitals; supervised individual case studies including diagnosis and treatment.

* **427-668A,B INSTRUCTION FOR PUPILS LEARNING ENGLISH AS A SECOND LANGUAGE.** (Half Course). The general body of knowledge common to all second language teaching and learning; modern English structure in a second language perspective based on applied linguistics; teaching techniques and media.

NOTE: A practicum is an integral part of this course.

427-669A,B SUPERVISION OF THE TEACHING OF READING. (Half Course). Problems of organization, administration, supervision and curriculum development in reading with particular emphasis on non-graded patterns of instruction and on provision for individual differences in rates and levels of achievement; the evaluation of instructional materials and equipment; the organization of workshops and in-service training.

427-670D SPECIAL PAPER ON THE TEACHING OF READING. Selection and exploration of a specific aspect of the teaching of reading, under the guidance of a faculty adviser; scholarly presentations of a survey and critique of the literature, and of conclusions arrived at by an original treatment.

427-671D PRACTICUM IN READING. Instruction of groups and individuals at various levels and various rates of learning; conferences and the preparation of case studies.

Options

The equivalent of two full graduate courses approved by the student's adviser. These must

include either 414-610A,B EDUCATIONAL MEASUREMENT (Half Course) and 414-645A,B DIAGNOSIS AND ASSESSMENT OF LEARNING PROBLEMS (Half Course) or 414-602D THE USE OF STATISTICS IN EDUCATIONAL PROCEDURES (Full Course). The remaining courses are to be selected with the approval of the Department.

DEPARTMENT OF EDUCATIONAL ADMINISTRATION

Professor — GEOFFREY B. ISHERWOOD (Chairman)

M.A. Educational Administration

Professor — G.B. ISHERWOOD *(Program Director)*

Additional Entrance Requirements

(1) Normally a minimum of two years of educational experience.
(2) A statement indicating the candidate's academic experience, professional teacher training (or rationale for its non applicability), teaching and/or other related experience in relationship to future career plans.
(3) Two letters of recommendation from administrative superiors attesting to the candidate's potential as an administrator to be forwarded directly to the Chairman of Educational Administration.

Program Requirements

The candidate must complete four and one half courses plus a thesis as outlined in the following description with the advice of the department.

Required Courses

411-612D PRINCIPLES OF EDUCATIONAL ADMINISTRATION. This introductory course deals with the following topics: administration as a field of study, organizations, administrative behaviour, personnel administration, communications. *First Course.*

414-610A,B EDUCATIONAL MEASUREMENT (Half Course). See M.Ed. Special Education.

411-621D THESIS PREPARATION. Seminars for the thesis to include the definition of a problem research design, methodology and the supervision of the thesis. Successful presentation of the thesis completes the requirements for this course. Prerequisites: 411-623D, 411-612D, 414-610A,B.

411-623D THEORY AND RESEARCH IN EDUCATIONAL ADMINISTRATION. The contribution of recent research findings particularly in sociology and social psychology to an understanding of organizational structure leadership, decision making and motivation in the administration of schools and school systems. Prerequisite 411-612D Corequisite 414-610A,B.

either

411-655A,B CASE STUDIES IN ELEMENTARY SCHOOL ADMINISTRATION. (Half Course). The interpretation and discussion of Case Studies relevant to the elementary scene in Quebec through the use of role playing discussion, video-taping and simulation exercises. *(Last Course).*

or

411-656A,B CASE STUDIES IN SECONDARY SCHOOL ADMINISTRATION. (Half Course). The interpretation and discussion of Case Studies relevant to the secondary scene in Quebec through the use of role playing discussion, video-taping and simulation exercises. *(Last Course).*

Options

One and one half courses approved by the student's Adviser.

M.Ed. Educational Administration

Professor — R.H. TALI *(Program Director)*

Additional Entrance Requirements

(1) Normally a minimum of two years of educational experience.
(2) A statement indicating the candidate's academic experience, professional teacher training (or rationale for its non applicability), teacher and/or other related experience in relationship to future career plans.
(3) Two letters of recommendation from administrative superiors attesting to the candidate's potential as an administrator to be forwarded directly to the Chairman of Educational Administration.

Program Requirements

The candidate must complete the equivalent of eight full courses as outlined in the following description with the advice of the Department.

Required Courses

411-612D PRINCIPLES OF EDUCATIONAL ADMINISTRATION. See M.A. Educational Administration. *First Course.*

414-610A,B EDUCATIONAL MEASUREMENT. (Half Course). See M.Ed. Special Education.

either

411-655A,B CASE STUDIES IN ELEMENTARY ADMINISTRATION. See M.A. Educational Administration. *Last Course.*

or

411-656A,B CASE STUDIES IN SECONDARY ADMINISTRATION. See M.A. Educational Administration. *Last Course.*

Options in Educational Administration

The equivalent of six additional full courses must be taken. At least four of these from the following:

411-623D THEORY AND RESEARCH IN EDUCATIONAL ADMINISTRATION. See M.A. Educational Administration.

* **411-630A,B ADMINISTRATION OF EDUCATION IN QUEBEC.** (Half Course). Consideration of the system of education in Quebec. The focus will be, first, on the basic legal framework of education in Quebec and the principal legal documents, and second, on the educational system in interaction with other social systems and with society as a whole.

* **411-631D ADMINISTRATION OF EDUCATION IN CANADA.** This course is intended to provide an overview of the structures of education, federally and provincially. Organization, legislation, and provincial commission reports are studied. Comparisons and contrasts between provincial educational programs are considered, with particular emphasis on education in the Province of Quebec.

* **411-632D SCHOOL FINANCE AND THE ECONOMICS OF EDUCATION.** A foundation course in revenue income for education in Canada, in general and in the Province of Quebec specifically , as it relates to the ongoing process of budget and school management.

411-635A,B FISCAL ACCOUNTABILITY FOR THE SCHOOLS. (Half Course). Consideration of the schools' responsibility to the public in maintaining high quality education within the limitations of accountability and organizational framework. Budgeting and evaluation of pupil progress will be studied as the measures of the schools' fulfilment of responsibility.

411-636A,B SCIENTIFIC MANAGEMENT AND HUMAN RELATIONS IN EDUCATIONAL ADMINISTRATION. (Half Course). Study of the major tenets of the scientific management movement and the human relations movement in administration and their applicability to educational institutions. Selected works in both areas will be studied and developed to give students historical insights into modern school management trends.

411-637A,B BEHAVIOURAL SCIENCES AND EDUCATIONAL ADMINISTRATION. (Half Course). Study of human behaviour within the school organization. Selected works in the areas of human motivation, group decision making, professionalism etc. will be analyzed.

* **411-642D DEVELOPMENT AND ADMINISTRATION OF THE SCHOOL CURRICULUM.** This course deals with the development of the school curriculum at various age levels and in different settings with the organization of the school and the classroom to implement curricular plans. A study will be made of a variety of organizational schemes and of their development and implementation.

* **411-645A,B PRACTICUM IN THE SUPERVISION OF INSTRUCTION.** (Half Course). Investigation of past and current theory and research dealing with supervision. Leadership and evaluation as roles of supervision will be analyzed in the school setting, with emphasis placed on supervision as the improvement of instruction and learning. Practical experience will include supervision of student teaching.

411-646A,B EDUCATIONAL PLANNING AND MANAGEMENT. (Half Course). An introduction to the theories, techniques, computational methods and evaluation criteria relevant to the design, development and operation of education systems, at the school and school district levels will be examined and related to educational practices, and traditions.

* **411-647A,B RESOURCE UTILIZATION IN EDUCATION SYSTEMS.** (Half Course). An introduction to planning — programming — budgeting systems in education. The historical development, theoretical foundations, mechanics, potentialities and limitations of this approach to resource utilization analysis and planning will be discussed with particular reference to those aspects of alternative approaches employed in a proposal for educational systems.

411-650A,B METROPOLITAN EDUCATION: DEMANDS AND RESPONSES. (Half Course). Study of local and federated school boards, including political demands and responses, organizational styles, administrative routines, and the interactions between administrators and elected officials.

* **411-660A,B COMMUNITY RELATIONS IN EDUCATION.** (Half Course). The basic objectives of this course include: The development of school-community analytical skills based upon relevant sociological and political concepts and techniques; the development of skill in establishing and maintaining effective methods of school-community liaison.

* **411-661A,B POLITICS OF EDUCATIONAL DECISION MAKING.** (Half Course). A study of the nature of political and social constraints within which school systems operate at the local, provincial and federal levels. The contributions of such basic social sciences as political science, political sociology and social psychology will be considered.

* **411-662A,B POLICY-MAKING IN EDUCATION AT THE PROVINCIAL LEVEL.** (Half Course). The process and sources of influence involved in the development and implementation of educational policies at the level of the Provincial Government.

411-663A,B POLICY-MAKING IN EDUCATION AT THE LOCAL LEVEL. (Half Course). The process and sources of influence involved in the development and implementation of educational policies within the local school district.

411-664A,B RESEARCH SEMINAR ON THE POLITICS OF EDUCATION. (Half Course). Seminar on theory and research relevant to the study of the political aspects of educational systems.

411-671A,B THE PRINCIPALSHIP. (Half Course). A study of the principalship from the perpective of role theory. Analysis of theoretical positions and the findings of recent research into the work of a school principal in terms of role conflict. Both theoretical statements and recent research related to the principalship will be considered.

411-673A,B LEADERSHIP THEORY AND EDUCATIONAL ORGANIZATIONS. (Half Course). A study of past and contemporary notions of leadership. The role of the leader in organizations staffed with professionals. The relationship between leadership and personnel and organizational concepts.

411-674A,B ORGANIZATION THEORY AND EDUCATION. (Half Course). A study of contemporary organization theory and the school as an organization. The interplay between structural concepts such as authority, hierarchy and centralization will be considered along with human behavior in organizations.

411-681A,B PRACTICUM IN THE ADMINISTRATION OF INSTRUCTION I. (Half Course). A directed analysis of the administrative experience. On-the-job field studies will be developed and interpreted. Departmental consultation and evaluation will be provided on an individual basis and will focus on specific field experience.

411-682A,B PRACTICUM IN THE ADMINISTRATION OF INSTRUCTION II. (Half Course). Directed implementation of planned change in an educational organization including observation and evaluation of the effects of change. This experience may be provided on the job, or through simulation or games techniques. Departmental consultation will be provided on an individual basis.

411-683A,B PRACTICUM IN THE ADMINISTRATION OF INSTRUCTION III. (Half Course). Planned observation of a specific aspect of administration in a school setting. Practices observed will be examined for their implication on educational systems and for their feasibility in the students' own situation.

411-685A,B EDUCATIONAL ADMINISTRATION AS A SOCIAL PROCESS. (Half Course). Study of administrative processes including problem solving, decision-making, leadership, control, cooperation, conflict resolutions, and goal setting. Specific emphasis will be placed on the utility of these processes for effecting change in the school.

Options in Other Departments

Courses taken outside the Department of Educational Administration must support the candidate's program and have the approval of the program director.

DEPARTMENT OF EDUCATIONAL PSYCHOLOGY AND SOCIOLOGY

Professor — HOWARD STUTT (Chairman)

M.A. Educational Psychology

Professor — R. EDWARDS *(Program Director)*

Additional Entrance Requirements

1) Statements of academic experience, professional teacher training, teaching experience and future career plans.
2) An introductory half course in statistics should form part of the undergraduate program of the prospective candidate. Students accepted who have not taken such a course will be required to take 414-610A,B Educational Measurement, or an acceptable substitute. See M.Ed. Special Education for course description of 414-610A,B.

Program Requirements

Candidates are required to follow an approved course of study, to select a topic for research, and to present the results of such research in the form of an acceptable thesis. This approved course will include a nucleus of required courses, other courses, at the option of the candidate from a list approved by the Department, as well as taking and maintaining registration in a course entitled Thesis Preparation, until such time as a successful thesis has been deposited with the Faculty of Graduate Studies and Research.

For the benefit of students who are unable to follow a course of full time study for two academic years, the Department of Educational Psychology and Sociology undertakes to provide, during the winter session, one full course which commences in the late afternoon. In Summer Session, one full course will be provided, of a duration of 3 hours, 4 days per week. Early (1st June) registration will be required for this course. Each of the required courses will be offered in rotation in this manner.

Required Courses

414-602D THE USES OF STATISTICS IN EDUCATIONAL PROCEDURES. Tests of differences and relations, analysis of variance, univariate regression, covariance, goodness of fit, scaling and redistribution of scores. Use of calculators and computers. Specific attention to research interpretation, nonparametric techniques, assigning appropriate statistical models.

NOTE:

(1) Prerequisite course: 414-610A,B EDUCATIONAL MEASUREMENT (Half Course), which may not be taken concurrently. Students who have not completed 414-610A,B or its equivalent are advised to complete this prerequisite in the session immediately preceding the session in which they register for 414-602D.

(2) Students also registering for 414-621D Seminars are advised to do so concurrently with 414-602D.
(3) 414-602D will normally only be offered during the winter sessions.

414-615D STUDIES IN EDUCATIONAL PSYCHOLOGY: CHILD DEVELOPMENT AND PERSONALITY. An analysis of the theoretical and research literature in child and adolescent development with particular attention to the major theories of personality. Applications to teaching and other aspects of education.

414-621D THESIS PREPARATION. Seminars on procedures of research and experimental design dealing with the identification of research problems, the collection of data and the analysis and reporting of results. Supervision of the thesis. Successful presentation of the thesis completes the requirements for this course. It is recommended that students attend the seminars concurrently with 414-602D.

414-635D STUDIES IN EDUCATIONAL PSYCHOLOGY: LEARNING AND INTELLIGENCE. The learning section of this course includes an examination of current conceptualizations of learning with emphasis on those from which applications have been made to the educational process. The second section of the course deals with theories of intelligence and intellectual processes. Normally, a student admitted to this course will have completed 414-602D, or its equivalent. Full time students may, with the written consent of the instructors of both 414-602D and 414-635D, take these courses concurrently during the winter sessions.

414-655D RECENT DEVELOPMENTS IN COGNITIVE PSYCHOLOGY. A study of recent developments in cognitive psychology, this course of lectures and seminars will trace the development of the ideas of Piaget, Bruner, Osgood, Ausubel, Berlyne and others who have influenced recent work in this area. Other models of cognitive functioning will also be examined, and attempts made to relate these to theories of intellectual development. Normally, a student who is admitted to this course will have completed 414-635D, or its equivalent, or will possess a background judged to be adequate.

Option

MINIMUM OF ONE FULL COURSE.

With the approval of the Department a minimum of one full course must be chosen from 414-603D/414-616A,B — Reading Course, 414-614D — Sociology of Education, from graduate level courses in Education or from courses offered by other Departments of the University.

In the event that a candidate has previously pursued to a sufficiently high standard, in an honours psychology program work of a nature sufficiently similar to 414-615, or to 414-655, such a student may be permitted to exercise a second option.

* **414-614D SOCIOLOGY OF EDUCATION.** Specific topics in this course differ somewhat from year to year but in general they deal with education in relation to society as a whole, educational organizations related to each other, the socialization process and the place of education in that process, and the social psychology of learning.

M.Ed. Special Education

Professor — D. SOKOLYK *(Program Director)*

Additional Entrance Requirements

1) Two letters of recommendation of teaching ability from a school principal, or consultant, or administrator.
2) Two letters of recommendation from former professors.
3) A personal report describing interest and experience in the field of Special Education.

An introductory half course in statistics should form part of the undergraduate program of the prospective candidate. Students accepted who have not taken such a course will be required to take 414-610A,B Educational Measurement, or an acceptable substitute.

414-610A,B EDUCATIONAL MEASUREMENT. (Half Course) Statistical measurements in education; graphs, charts, frequency distributions, central tendencies, dispersion, correlation, and sampling errors.

NOTE: Prerequisite to 414-602D. THE USES OF STATISTICS IN EDUCATIONAL PROCEDURES. These courses may not be taken concurrently.

Program Requirements

The program has two main components:

Phase I — Core Curriculum

This part of the program is intended to provide a knowledge basis upon which the student makes decisions related to the development of his professional needs and interests.

Phase II — Special Studies, Field Work, and Internship

A. — Field Experience and Reading/Seminar — 4 courses
B. — Internship — 4 courses

The requirements of the Internship will, in most cases, be satisfied through full-time employment as a teacher in a Special Education assignment in either a school or clinic setting for exceptional children. The student is responsible for obtaining the position.

Students will usually include in their program the Special Education courses listed below. However, students with special qualifications or interests may

with the approval of the Department concerned substitute other graduate level courses offered by the Faculty of Education or by other faculties of the University.

OPTIONS

With the approval of the Department one of the following:

414-603D READING COURSE

414-616A,B READING COURSE

SPECIAL EDUCATION COURSES

414-642A/414-643B EDUCATION OF EXCEPTIONAL CHILDREN. (Half Courses). Two related and sequential half courses. Introduction to programs and problems of educating handicapped or gifted children.

414-644D LEARNING PROBLEMS OF EXCEPTIONAL CHILDREN. Learning process; relationship of various handicapping conditions to difficulties in learning; developmental and corrective programs.

414-645A,B DIAGNOSIS AND ASSESSMENT OF LEARNING PROBLEMS. (Half Course). Principles and procedures in the education of pupil growth and achievement and in the diagnosis of the causes of poor achievement. Emphasis will be given by the class teacher. Reference will be made to the use by the teacher of tests given outside the classroom by guidance counsellors or psychologists.

414-646A,B PRACTICUM: DIAGNOSIS AND ASSESSMENT OF LEARNING PROBLEMS. (Half Course). Practice in the administration and interpretation of individual and group tests; use of other-than-teacher test results; collection and use of other pertinent data.

414-653A,B INDIVIDUALIZED CURRICULA AND SPECIAL TEACHING METHODOLOGY. (Half Course). Methodology and curricula for pupils of different types of exceptionality and at different stages of development; materials, activities, records, grading.

414-654A,B PRACTICUM: INDIVIDUALIZED CURRICULA AND SPECIAL TEACHING METHODOLOGY. (Half Course). An opportunity will be given to develop individual teaching programs for selected exceptional children. Practice will be given in the use of specialized teaching techniques.

414-656D CLINIC: REMEDIATION OF SELECTED LEARNING DIFFICULTIES. Participation as a special education teacher in an interdisciplinary team; planning and carrying out of remedial programs for individual pupils; working with parents of children with learning difficulties.

*__414-658D SEMINAR: REMEDIATION OF SELECTED LEARNING DIFFICULTIES.__ Directed and independent study as well as group discussion

414-661A,B INTERNSHIP I. (Half Course). Analysis and practice in teaching skills or an equivalent supervised experience.

414-662A,B INTERNSHIP II. (Half Course). The student will be supervised while practising as a special educator.

414-663A,B INTERNSHIP III. (Half Course). A workshop seminar dealing with models of teaching and curriculum content in specific subject areas.

414-664A,B INTERNSHIP IV. (Half Course). A supervised practicum with the student functioning in a leadership role or as a consultant in a (summer) learning center or equivalent setting.

†At present course 414-656D includes participation as a junior staff member in the Learning Centre under the direction of Dr. M.S. Rabinovitch of the Department of Psychology of McGill.

DEPARTMENT OF PHYSICAL EDUCATION

Professor — R.E. WILKINSON (Chairman)

M.A. Physical Education

Professor — JOHN CHOMAY *(Program Director)*

Additional Admission Requirements

An undergraduate degree with a major in Physical Education, or its equivalent, from a recognized university. Normally, candidates must have completed a two year teaching requirement before commencing the M.A. (P.E.) program. However, applicants with strong academic qualifications throughout their undergraduate years may be considered for entry into the program without teaching experience.

No entrance examinations are required.

Where possible, all applicants are requested to contact the program director for an interview.

Program Requirements

Students are required to complete five full courses and a thesis as outlined below.

Required Courses

Three full courses

414-602D THE USE OF STATISTICS IN EDUCATIONAL PROCEDURES. See M.A. Educational Psychology.

434-621D THESIS PREPARATION. Seminars on procedures of research and experimental design dealing with the identification of research problems, the collection of data and the analysis and reporting of results. Supervision of the thesis. Successful

presentation of the completes the requirements for this course.

PHYSICAL EDUCATION COURSES

A minimum of one full course from the following:

434-662D ADVANCED EXERCISE PHYSIOLOGY. A comprehensive treatment of physiological processes in response to exercise. Emphasis is given in such areas as: nature of muscular activity, regulation during exercise, effects of physical training, genetic, nongenetic and environmental factors limiting the individual's adaptive value. A laboratory program is designed to familiarize the student with methods and problems of ergophysiological research.
†Offered in conjunction with the Faculty of Medicine.

* **434-664D PSYCHOLOGY OF MOTOR PERFORMANCE.** Study of the application and analysis of psychological principles and theories to motor learning and performance. Emphasis on selected aspects such as individual differences, transfer, interference, stress, reminiscence and factors affecting motor performance.

* **434-665D MOTOR PERFORMANCE OF EXCEPTIONAL CHILDREN.** A detailed study of the motor performance of exceptional children based on an information processing model of human performance. Attentional, perceptual, and other processes underlying motor performance will be examined with special emphasis on the differences found in these processes with varying degrees of exceptionality.

434-666A BIOMECHANICS — ADVANCED KINEMATICS. The kinematical analysis of human movement will be performed emphasizing the principles of physics and the mathematical models which underline terrestrial and aquatic locomotion. The implements man employs for sport, the flight of projectiles which result from trowing, striking, kicking and jumping will also be analyzed.

434-667B BIOMECHANICS — SEMINAR. The purpose of this course will be to familiarize the student with the relevant literature regarding the kinematic and electromyographic analysis of human movement patterns.

Optional Courses

TWO FULL COURSES.

Two additional courses, as approved by the Department, may be chosen from the Physical Education options above, and/or the courses listed below, from graduate level courses in the Faculty of Education, or from other faculties of the University.

434-603D READING COURSE.

434-616A,B READING COURSE. (Half course).

434-671A,B EXPERIMENTAL PROBLEMS. (Half course). Study in one area of: Ergo-Psysiology or Biomechanics or Psychology of Motor Performance or Motor Performance for Exceptional Children. To provide an opportunity to conduct a research project and develop an awareness of the problems involved in the area of concentration under departmental supervision.

434-672D EXPERIMENTAL PROBLEMS. See 434-671A,B. This course, however, is more intensive and comprehensive in nature.

DEPARTMENT OF SOCIAL FOUNDATIONS OF EDUCATION

Professor — J.K. JOBLING (Chairman)

M.A. Degrees

The Department offers Master of Arts degrees in three areas: Comparative Education (Dr. J.P. LIPKIN*Program Director),* History of Education (Dr. J.K. JOBLING, *Program Director),* and Philosophy of Education (DR. N.G. COCCALIS, *Program Director).* The appropriate courses will be chosen in consultation with the Chairman of the Department.

Special Entrance Requirements

1) Normally students should have an Honours or a similar good standing in their undergraduate academic or professional work. They should also have an emphasis in at least one area of the humanities or the social sciences.
2) Well qualified students may be admitted to the program without teaching experience.
3) Whenever practical, an interview is required

Program Requirements

Students are required to complete five full courses, one of which must be 413-621D — Thesis Preparation, and a thesis. In addition to Department courses listed below, students may, with Departmental approval, elect courses from other departments of the Faculty of Education or from other faculties of the University. Normally only one Reading Course may be taken.

413-603D READING COURSE.

* **413-610D SOCIAL FOUNDATIONS OF EDUCATION.** An examination of education and society through the eyes of educational historians, educational philosophers, educational sociologists, and comparative educators. Particular attention will be devoted to persistent educational problems at home and abroad.

* **413-615D SELECTED ISSUES IN CONTEMPORARY EDUCATION.** In-depth analysis of a limited numbers of issues and problems in education. Three to five contemporary problems will be selected and a variety of approaches used. The following are some examples of issues that may be selected: education and the future; moral education; teacher education; foundations of curriculum.

413-616A,B READING COURSE. (Half Course).

413-617D HISTORICAL FOUNDATIONS OF CONTEMPORARY EDUCATION. A study of contemporary issues in education against an historical background. Some of the questions treated in depth will be the changing relations of church and state in education; the problems of mass education; the evolving concept of the university; the impact of the "second industrial revolution" on the school.

413-620D STUDIES IN COMPARATIVE EDUCATION. This course seeks to inform the student of contemporary educational developments in selected modern countries and in developing areas, and to familiarize him with some of the techniques and methods used in comparing different systems of education.

413-621D THESIS PREPARATION. Seminars on research procedures, location and extraction of data and presentation of findings. Supervision of the thesis. Successful presentation of the thesis completes the requirements for this course.

* **413-627D PHILOSOPHICAL ANALYSIS AND THE PROBLEMS OF EDUCATION.** An examination of philosophical methods such as logical analysis, linguistic analysis and phenomenology, together with an exploration of their function in the clarification of educational issues.

* **413-637D DEVELOPMENT OF EDUCATION IN CANADA.** A cultural treatment of education in Canada from its beginnings to the present.

413-640D COMPARATIVE STUDIES IN EDUCATION IN WESTERN EUROPE. An in-depth treatment of contemporary education in France and Germany from 1800 to the present in relation to the social forces impinging on it.

413-641D COMPARATIVE STUDY OF EDUCATION IN DEVELOPING NATIONS. An analysis of education in selected Asian, African and Latin-American nations with special emphasis on the role of education in nation building.

413-642D MINORITY EDUCATION IN COMPARATIVE PERSPECTIVE. Comparative study of the dynamics of majority-minority relations and their relevance for educational policy and practice. Special attention will be given to the Quebec context.

* **413-647D HISTORY OF EDUCATION IN FRENCH CANADA.** Consideration of the ideas and institutions relating to education in French Canada from the sixteenth century to the twentieth, with particular attention to the historical antecedents of contemporary problems.

413-650D COMPARATIVE STUDIES OF EDUCATION IN COMMUNIST COUNTRIES. Analysis of communist theory and educational practice in the Soviet Union and selected Eastern European and developing nations. Similarities and differences between communist and non-communist educational systems and the relationship between education and the political order will be stressed

* **413-657D LEADING EDUCATIONAL THINKERS.** A study in depth of the ideas of prominent educational thinkers. Selection will be made from among such writers as Plato, Aquinas, Rousseau, Kant, Maritain, Dewey, Whitehead, Russell and McLuhan.

413-667D HISTORY OF EDUCATION IN THE 19TH CENTURY. An analysis of the cultural forces that helped shape education in the century of Darwin, Marx, and Freud. Attention will be given to the impact of nationalism, colonialism, and industrialism on educational development.

413-677D ADVANCED PHILOSOPHY OF EDUCATION. An inquiry into significant philosophic questions such as the nature of educational theory, was of knowing, justification of judgments in education, the relations of science, philosophy and religion in education.

DEPARTMENT OF EDUCATION IN MATHEMATICS AND SCIENCE

Professor — William E. Searles (Chairman)

M.Ed. Teaching of Biology

Professor — William E. Searles (Program Director)

Additional Entrance Requirements

1) A minimum of 36 university level credits in biology, applied chemistry or biochemistry.
2) Two letters of recommendation from a school principal or science department head attesting to the applicant's competence in teaching biology.
3) A letter of recommendation from a former college or university instructor stressing academic competence.

Program Requirements

1) Four full courses in biology aimed at developing the teacher's existing knowledge and consolidating it as a basic resource for the teaching of biology. These courses are to be selected in consultation with the M.Ed. Teaching of Biology program advisor appointed by the Biology Department.
2) Four half course seminars in the methodology, principles and philosophy of teaching and learning, especially as these relate to modern biology curriculum theory and development. Students may, with permission of the Program Director in the Faculty of Education, elect to substitute one or more of the seminar courses for a half or full reading course.
3) A substantial monograph on some important aspect of the learning and teaching of biology, or a comparative study in curriculum development in biology. The monograph has a credit weight of two full graduate level courses.

The program is available on a part-time or a full-time basis and can normally be completed, part-time, in three calendar years.

417-631A MODERN SCIENCE CURRICULA FOR BIOLOGY. (Half course). An analysis of alternate curricular practices implemented in high schools during the curriculum reform movement of the past decade. The theoretical substantiation of the role of content, process and human values in the curriculum will be examined.

417-632B INSTRUCTIONAL THEORIES IN MODERN SCIENCE CURRICULA. (Half course). Instructional theories and designs appropriate for the teaching of biology within the framework of a Modern Science Curriculum.

417-633A SCIENCE CURRICULUM THEORIES. (Half course). A survey of the various curriculum theories of the 20th century and the associated curriculum focus.

417-634B SCIENCE CURRICULUM DESIGN (Half course). A seminar course to provide an in-depth study of the selection and organization of subject matter in the design of a science curriculum.

417-638D MONOGRAPH.

Options

417-603D READING COURSE.

417-616A,B READING COURSE. (Half course).

M.Ed. Teaching of Chemistry

Professor — Pearl Francoeur (Program Director)

Additional Entrance Requirements

1) A minimum of 36 university level credits in chemistry, applied chemistry, molecular biology or biochemistry.
2) A letter of recommendation from a school principal or science department head attesting to the applicant's competence in teaching chemistry.
3) Two letters of recommendation from a former college or university instructor stressing academic competence.

Program Requirements

1) Four full courses in chemistry aimed at developing the teacher's existing knowledge and consolidating it as a basic resource for the teaching of chemistry. These courses are to be selected in consultation with the M.Ed. Teaching Chemistry Program advisor appointed by the Chemistry Department.
2) Four half course seminars in the methodology, principles and philosophy of teaching and learning, especially as these relate to chemistry. 417-611A,B; 417-612A,B; 417-613A,B; 417-614A,B Students may, with permission of the Program Director in the Faculty of Education, elect to substitute one or more of the seminar courses for a half or a full reading course (417-603D, 417-616A,B).
3) A substantial monograph on some important aspect of the learning and teaching of chemistry, or a comparative study in curriculum development in chemistry. The monograph has a credit weight of two full graduate level courses—(417-618)
The program is available on a part-time or a full-time basis and can normally be completed, part-time, in three calendar years.

Courses

417-611A MODERN SECONDARY SCHOOL CHEMISTRY CURRICULA. (Half Course) An analysis of the science education literature with a view to substantiating the philosophic and psychological basis that guided the curriculum reform movement of the past decade. Present curricular trends in relation to emphasis on theoretical content, process, environmental chemistry and human values will be examined.

417-612B INSTRUCTIONAL THEORIES IN MODERN SCIENCE CURRICULA (Half Course) Instructional theories and designs appropriate for the teaching of chemistry within the framework of a Modern Science Curriculum.

417-613A THE APPLICATIONS OF SCIENCE CURRICULUM THEORIES (Half Course) A survey of the various curriculum theories of the 20th century and the associated curriculum focus.

417-614B SCIENCE CURRICULUM DESIGN (Half Course) An in-depth study of the selection and organization content in the design of a modern chemistry curriculum.

417-618D MONOGRAPH

Options

417-603D READING COURSE

417-616A,B READING COURSE

M.Ed. Teaching of Mathematics

Professor — R. Whitwell (Program Director)

Additional Entrance Requirements

1) The candidate must be approved by the Mathematics Department (Faculty of Science) in this University before being admitted to the first year of the mathematics component of the M.Ed. in the Teaching of Mathematics.
2) A second class standing in Mathematics is required in the first year before a candidate is allowed to proceed with the educational component in the second year of the program.

Program Requirements

1) Four full courses or eight half courses at the graduate level in Mathematics as prescribed for each individual candidate by the Mathematics

Department in the Faculty of Science. This is, at present, a full time program and no candidate is permitted to follow this first year of the program as a part time candidate.
2) A standing of at least 65% is required *in each* of the four full courses or eight half courses before the candidate is admitted to the educational component which is taken in the second year of the program. This second year may be taken as part time study. The candidate is expected to attend seminars in the evenings and to attend summer session in order to complete the educational component.
3) **First Year** — Mathematics component. Individually prescribed courses in Mathematics at graduate level taken in the Mathematics Department, Faculty of Science (Full Time)

Second Year Educational component. Taken at the Faculty of Education under the guidance of the Program Director.

Courses

428-611D SEMINAR. Curriculum design in Mathematics at the Elementary, Secondary or College level. The emphasis in this course is on the realistic applications of mathematics in the sociological-technological environment.

428-612D SEMINAR. Measuring achievement in Mathematics. Mathematical task-analysis; hierarchical structuring of tests; criterion-sampling; item-banking. Use of computer for analyzing test data and monitoring individual student competency levels in mathematics.

428-618D MONOGRAPH. The monograph is to be presented to the Program Director by the candidate after the satisfactory completion of the educational component. It will embody the earlier studies of the program and will be written by the candidate with a view to making a contribution towards future mathematics education. Each candidate has the opportunity to combine his mathematical knowledge with his knowledge of teaching and learning to benefit the educational enterprise.

Options

428-616A READING COURSE. (Half course). Related to matters of concern in Mathematics Education, as directed by the Program Director.

or

428-616B READING COURSE. (Half course). Related to the *candidate's particular interest* in Mathematics Education. This course requires the approval of the Program Director and must be directed toward the improvement of School, College instruction and/or programs in Mathematics.

M.Ed. Teaching of Physics

Professor — Peter Landry (Program Director)

Additional Entrance Requirements

1) A minimum of 36 university credits in Physics, Applied Physics, Mathematics or Physical Chemistry of which at least 18 credits must be in Physics or Applied Physics.
2) A letter of recommendation from a school principal stressing ability in teaching Physics.
3) Two letters of recommendation from a former college or university instructor stressing academic competence.

Program Requirements

1) Four full courses in Physics aimed at developing the teacher's existing knowledge and consolidating it as a basic resource for the teaching of Physics.
2) Four half-course seminars in the principles and philosophy of teaching, especially as it relates to Physics.
3) A substantial monograph on some important aspect of the learning of Physics. The monograph has a weight of two full graduate courses.
The program is given in lock-step with admissions only being made at intervals. The next intake is planned for 1977-78. It is a part-time program which requires at least three calendar years to complete.

* **198-602D BASIC PHYSICS FOR HIGH SCHOOL TEACHERS.**

* **198-603D PHYSICAL MEASUREMENTS.**

* **198-604D MODERN PHYSICS.**

* **198-605D SELECTED TOPICS IN CONTEMPORARY PHYSICS.**

* **417-641A,B SEMINAR I.** (Half course).

* **417-642A,B SEMINAR II.** (Half course).

* **417-643A,B SEMINAR III.** (Half course).

* **417-644A,B SEMINAR IV.** (Half course).

417-648D MONOGRAPH.

M.Ed. Teaching of Home Economics

Professor — Aline Smith (Program Director)

Additional Entrance Requirements

1) Undergraduate degree or its equivalent in Home Economics
2) Recommendation for teaching ability

Program Requirements

1) Five or six full courses drawn from among offerings in Education and Food Science, including the statistics course 414-602D (whose pre-requisite is 414-610A,B — Educational Measurement)

2) Project Report on Home Economics Education to be directed jointly by the School of Food Science and the Faculty of Education.

DEPARTMENT OF EDUCATION IN SECOND LANGUAGES

Professor — Magdelhyne F. Buteau (Chairman)

M.Ed. Teaching of French as a Second Language

Professor — M. Buteau (Program Director)

Additional Entrance Requirements

1) The Undergraduate Degree must show a concentration of six (6) full courses in French, including at least one full course in French Literature, one full course in French-Canadian Literature and two full courses in Linguistics
2) A basic methods course in the Teaching of French as a Second Language
3) Two years experience in Teaching French as a Second Language
4) An assessment interview with the Program Director
5) Joint approval by the Department of Second Languages and the Department of French Language and Literature (Faculty of Arts)

Program Requirements

1) Four (4) full courses including at least one course in French Literature, one course in Linguistics and one course in French Canadian Literature
2) Two (2) seminars offered by the Department of Education in Second Languages: — 431-611D and 431-612D
3) The submission of a monograph on some topic related to the Teaching of French as a Second Language

The program can be pursued on a full-time or part-time schedule. A minimum of two years of study is required. Part-time candidates generally attend at least two (2) sessions at the McGill French Summer School and evening course in various departments of the Faculty of Education and of the other Faculties during the academic year. Nine (9) courses taken at the French Summer School are accepted as the equivalent of three (3) full courses. Elective courses may include courses in Linguistics, Supervision, Group Dynamics, Measurement, Psychology, Communication, Sociology of Education, etc. The individual selection of courses is made in accordance with and in consultation with the Program Director.

Courses

431-611D SEMINAR I. A review of current theory and practice in the Teaching of French as a Second Language. (3 hours a week)

431-612D SEMINAR II. Survey and critical analysis of application of linguistics to the Teaching of French as a Second Language.

431-618D MONOGRAPH

M.Ed. Teaching of English as a Second Language

Professor — Georges Terroux (Program Director)

Additional Entrance Requirements

1. Three full courses in contemporary British and North American literature at the post-secondary level.
2. The equivalent of two full courses in Linguistics; Language, Language learning; General Phonetics; Theory of Morphology and Syntax

N.B. For those who elect 104-630A (General Phonology) and 104-631B (Issues in Generative Phonology) the prerequisite is 104-350/351 (General Phonetics/Phonology).

3. A basic methods course in TESL.
4. A teaching certificate.
5. Two years experience in teaching ESL.

Program Requirements

1. Two seminars offered by the Department of Education in Second Language:— 431-621D and 431-622D
2. One course offered by the Department of English:— 110-784D Language, Linguistics and Literature
3. One course offered by the Department of Linguistics to be selected among the following:— 104-620D Current Issues in Socio-Linguistics; 140-680D Theoretical Foundation of Language Teaching Methods; or 104-770D Problem Language Content
4. The submission of a monograph on some topic relevant to the Teaching of English as a Second Language
5. Two full courses or four half courses at the Graduate level and according to professional needs and academic preparation selected from the following areas: English, Linguistics, Psycholinguistics, Sociolinguistics, Educational Psychology, Educational Administration, Quebec Civilization, after consultation with the Departments involved.

This program can be pursued on a full time or part time schedule. A minimum of two years study is required. The individual selection of courses is made in consultation with the Program Director whose approval must be obtained.

Courses

431-621D SEMINAR I. Application of Linguistics to the TESL Area (3 hours a week)

431-622D SEMINAR II. Survey of Research and Practice in Teaching English as a Second Language. (3 hours a week)

431-628D MONOGRAPH

DEPARTMENT OF EDUCATION IN THE SOCIAL SCIENCES

Professor - Morton Bain (Chairman)

M.Ed. Teaching of Geography

Professor — John Wolforth, (Program Director)

Program Requirements

The Department offers programs leading towards the Master of Education degree in the Teaching of Geography and the Teaching of History. Both degrees may be obtained by part-time or full-time study, consisting of six full courses or their equivalent and the preparation of a monograph. Courses are offered within the Department of Education in the Social Sciences, the Department of Geography and the Department of History in both regular and summer session.

Additional Entrance Requirements

1) An undergraduate degree with at least a major in Geography or its equivalent, from a recognized university.
2) Approval of the candidate by the Department of Geography.
3) Normally, two years of experience in teaching Geography with evidence of superior teaching ability.

Required Courses

430-611A,B SEMINAR IN THE TEACHING OF GEOGRAPHY I. (Half course). The major objective of the course is to promote critical discussion of some contemporary issues in the teaching of geography. The course examines developments in the field of geography (such as the use of quantitative methods, model building, perceptual studies and simulation) and their relevance to the teaching of geography in the schools.

430-612A,B SEMINAR IN THE TEACHING OF GEOGRAPHY II. (Half course). (Continuation).

430-613A,B SEMINAR IN THE TEACHING OF GEOGRAPHY III. (Half course). (Continuation).

430-614A,B SEMINAR IN THE TEACHING OF GEOGRAPHY IV. (Half course). (Continuation).

430-618D MONOGRAPH PREPARATION AND PRESENTATION. The preparation and submission of a paper or project report on the teaching of geography.

In addition, four full courses are taken with the Department of Geography, details to be announced.

Alternative Courses

With the approval of the program director, one of the following may be substituted for any one full course or any two half courses in the program:

430-603D READING COURSE IN GEOGRAPHY. Individualized guided study of a topic in the teaching of geography selected according to the student's interests and teaching experience.

or

Any other senior or graduate level course offered by the Faculty of Education or by other faculties of the University.

M.Ed. Teaching of History

Professor — David Smith (Program Director)

Additional Entrance Requirements

1) An undergraduate degree with at least a major in history or its equivalent, from a recognized university.
2) Approval of the candidate by the Department of History.
3) Normally, two years of experience in teaching history with evidence of superior teaching ability.

Required Courses

430-631D SEMINAR (1) IN HISTORY TEACHING. A study, analysis and evaluation of contemporary trends in the teaching of history and of their implications for classroom practice.

430-632D SEMINAR (2) IN HISTORY TEACHING. An examination and critical analysis of selected topics and strategies in history teaching.

430-638D MONOGRAPH PREPARATION AND PRESENTATION. The preparation and submission of a paper or project on the teaching of history.

In addition, three full graduate level courses are taken with the Department of History, details to be announced.

Optional Courses

With the approval of the program director, one full course must be chosen from the following:

430-603D READING COURSE IN HISTORY TEACHING. Individualized guided study of a topic in the teaching of history selected according to the student's interests and teaching experiences.

or

Any other senior or graduate level course offered by the Faculty of Education or by other faculties of the University.

McGill University

Faculty of Graduate Studies and Research 1976 – 77

Section "H"
Library Science

NOTE: Courses marked with an asterisk (*) are not offered in 1976-77. The letters, which form part of course numbers, have the following significance:
A — Fall term course
B — Winter term course
L — Summer term course
D — Full session course (Fall and Winter terms)

The official McGill University mailing address is:
McGill University, P.O. Box 6070, Station A
Montreal, Quebec, Canada H3C 3G1

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CALENDAR FOR SESSION 1976-77

1976

September 8, Wednesday	Enrolment of first year students
September 9, Thursday	Classes begin for first year students
September 13, Monday	Classes begin for second year students
October 11, Monday	Thanksgiving holiday
December 10, Friday to December 15, Wednesday	Examinations for first year students
December 15, Wednesday	Fall term ends

1977

January 10, Monday	Winter term begins
February 11, Friday and February 12, Saturday	Mid-term holiday
April 8, Friday to April 11, Monday (incl.)	Easter Vacation
April 19, Tuesday	Winter term ends for second year students
April 22, Friday	Winter term ends for first year students

1 STAFF

1.1 ADMINISTRATIVE OFFICERS

ROBERT E. BELL, C.C., B.A., M.A.(U.B.C.), Ph.D.(McG.), D.Sc.(U.N.B., Laval), LL.D.(Tor.), F.R.S., F.R.S.C. **Principal and Vice-Chancellor**

EIGIL PEDERSEN, B.A. (Sir G. Wms.), M.A. (McG.), Ph.D.(Harv.) **Vice-Principal (Academic)**

LEO YAFFE, B.Sc., M.Sc.(Man.), Ph.D.(McG.), F.C.I.C., F.A.P.S., F.R.S.C. **Vice-Principal (Administration)**

ALLAN McCOLL, D.F.C., B.Com.(McG.), C.A. **Vice-Principal (Finance)**

WALTER F. HITSCHFELD, B.A.Sc.(Tor.), Ph.D. (McG.), F.R.Met.S. **Vice-Principal (Research) and Dean, Faculty of Graduate Studies and Research**

COLIN McDOUGALL, D.S.O., B.A.(McG.) **Secretary-General**

JEAN-PAUL SCHULLER, B.A.(Ott.) **Registrar**

1.2 LIBRARY SCHOOL STAFF

TO BE APPOINTED **Director**

RODOLPHE LAVERGNE, B.A.(Montreal), B.L.S., M.L.S.(McG.) **Associate Director and Associate Professor**

EFFIE C. ASTBURY, B.A., B.L.S.(McG.), M.L.S.(Tor.) **Professor of Library Science**

C. DAVID BATTY, B.A.(Durham), F.L.A. **Professor of Library Science**

MARY M. Hall, B.A.(Marianopolis), B.L.S., M.L.S.(McG.) **Associate Professor**

ENID CLEMENT, B.A.(Sir G. Wms.), B.L.S., M.L.S.(McG.) **Assistant Professor**

MARY ELIZABETH DOLAN, B.A.(U.N.B.), M.L.S.(McG.) **Assistant Professor**

PETER F. McNALLY, B.A.(Western Ontario), B.L.S., M.L.S.(McG.) **Assistant Professor**

VERNON ROSS, B.S. in L.S.(Col.), M.A.(McG.) **Emeritus Professor**

VIOLET L. COUGHLIN, B.Sc., B.L.S.(McG.), M.A. (Col.), D.L.S. (Col.) **Emeritus Professor**

STEPHANIE BOTH, B.A.(Sir G. Wms.), B.L.S.(Tor.), M.L.S.(McG.) **Librarian**

1.3 SPECIAL LECTURERS

JOHN ANDREASSEN, Ph.B.(Wis.), M.A.(Louisiana) **University Archivist, McGill**

DAVID BOURKE, B.Arch.(McG.), M.Arch.(Harv.), F.R.A.I.C., R.C.A. **Director of Development and Communication, McGill**

NORAH P. BRYANT, B.A., B.L.S. (McG.) **Chief Librarian, Westmount Public Library**

STUART FRASER, B.Sc.(Exeter) **Systems Application Manager, Aluminum Company of Canada, Ltd.**

WILLIAM HILLGARTNER, B.S., M.Ed.(Penn. State), Ph.D.(Syracuse) **Director, Instructional Communications Centre, McGill**

ELIZABETH LEWIS, B.A., B.L.S.(McG.) **Rare Books Librarian, McGill**

WALTER GROSSMANN, M.S.(Simmons), Ph.D.(Harv.) **Director of the Library, University of Massachusetts, Boston, Mass.**

KEVIN J. McGARRY, Dip.Soc.(London), F.L.A., M. Lib.(Wales) **Principal Lecturer, College of Librarianship, Wales**

MIRIAM TEES, B.A., B.L.S., M.L.S.(McG.) **Chief Librarian, Royal Bank of Canada**

OCCASIONAL LECTURERS

ISOBEL BEST, Chief Librarian, Town of Mount Royal Public Library; CLAIRE COTÉ, Chief Librarian, Pointe-Claire Public Library; AILEEN DESBARATS, Lande Canadiana Librarian, McGill University; JOHN DRBLIK, Supervisor, Records Servi-Centre, Canadian National Railways; CYNTHIA DURANCE, Director, Cataloguing Branch, National Library; CLAIRE ENGLAND, Assistant Professor, Faculty of Library Science, University of Toronto; RICHARD K. GARDNER, Editor, Choice, Middletown, Conn.; ROSEMARY HADDAD, formerly Print Curator, Rare Book Department, McGill University; JOHN HOBBINS, Reference Librarian, McLennan Library, McGill University; JAMES KANASY, Associate Director of Library Services, Concordia University; CATHERINE KOLLAR, Government Documents Librarian, McGill University; ROY LEMOYNE. Architect, Montreal; MARY LEWIS, Chief Librarian, Pratt & Whitney Aircraft of Canada Ltd.; NORMAN McLEOD, Chief Librarian, Sources Public Library, Roxboro; JOHN MAPPIN, Book Collector, Montreal; IRENA MURRAY, Reference Librarian, McLennan Library, McGill University; ROBERT REID, Typographical Designer, Montreal; HELEN ROGERS, Chief, SDI Division, National Library, Ottawa; ANNA ROVIRA, Chief Librarian, Bibliothèque municipale de LaSalle; ELIZABETH SAUNDERS, formerly Map Curator, Rare Book Department, McGill University; PATRICIA

SMITH, Chief, Public Library Services, Northwest Territories, Hay River; JEAN WEIHS, Course Director, Library Techniques, Seneca College of Applied Arts and Technology, Toronto.

2 GENERAL INFORMATION

McGill University was the first institution in Canada to provide library training and the first to grant a degree in library science. Short summer programs were given from 1904-1927, the first regular sessional program being given in 1927-28. The program of the School was accredited by the Board of Education for Librarianship of the American Library Association, and the B.L.S. (5th year) degree was first conferred in May 1931. In the session of 1956-57, a 6th year Master of Library Science degree was first offered. After 1964-65 the 5th year degree was discontinued and the M.L.S. degree awarded only after two years of graduate study. In January 1975 the School's M.L.S. program was re-accredited by the Committee on Accreditation of the American Library Association under the *1972 Standards for Accreditation*.

The School's program aims to prepare its graduates to play a dynamic part in the operation of the libraries of today, to be responsive to change, flexible, and perceptive of the need to adjust to new modes in the future. It recognizes a responsibility, in cooperation with professional associations, to share in the continuing education of practising librarians. Though the School does not offer a degree at the doctoral level, it endeavours to make a contribution to the advancement of knowledge, especially in the field of information science.

The School is situated in a large city in which are to be found all types of libraries and is part of a university with a tradition of sound scholarship.

It is located on the street floor of the McLennan Library and has an excellent collection in the field of library science and laboratory collections for cataloguing, reference, and children's literature. Students also have full access to the resources of the University's library system, with collections totalling more than 1,680,000 items.

For instruction in information science a Documentation and Information Systems laboratory is located within the School.

LENGTH OF STUDY FOR M.L.S. DEGREE

The M.L.S. degree is awarded after successful completion of two academic years of post-graduate study. The first year of the program must be taken on a full-time basis; the second year may be completed by part-time study.

REQUIREMENTS FOR ADMISSION

1) Applicants for admission must have a B.A. or B.Sc. degree from a recognized university. The School will take into account the character of the applicant's undergraduate studies and his/her suitability for library work. Courses in the *humanities, sciences,* and *social studies* are preferred as forming a suitable basis for studies in library science. Courses of a purely vocational or professional nature cannot be counted as fulfilling this requirement, which is intended to ensure an adequate academic preparation. Academic standing of at least B (or second class) is required.
2) A knowledge of at least one language other than English is expected.
3) Application forms may be obtained from the School and, when completed, should be returned to the School. Official transcripts of the applicant's university record must also be supplied. Deadline for receipt of application forms for entrance into the first year of the program is May 15. *As enrolment is limited, early application is advisable.*
4) Previous library experience, while not essential, will be given consideration in assessing an application.

WORK EXPERIENCE

All students, and especially those without previous experience of library work, are strongly advised to work in a library during the summer period between the end of the first year session and the second year of the program.

EMPLOYMENT

A placement service is situated on the campus.

REGISTRATION

Students entering the first year of the M.L.S. program should present themselves at the Graduate School of Library Science, 3459 McTavish Street on September 8, 1976. All others may register between September 13 and September 16.

EXAMINATIONS AND ADVANCEMENT

Final marks are based on the term's work and/or on examinations. Classification of marks:
100-80% — A; 79-65% — B; Below 65% — failure.

Students who do not fulfill requirements satisfactorily may be asked to withdraw from the School.

FEES AND EXPENSES

TUITION FEES

The University reserves the right to make changes without notice in the published scale.

Fees are due and payable 10 days after formal registration in the Faculty of Graduate Studies and Research. A late fee of $25 is charged for payment after the specified dates, and no days of grace are allowed. Fees may be paid in two instalments; second instalment payable January 15, 1977.

	Tuition	Student Services	Students' Societies
First year	$570	$70	$29.50
Second year	285	35	29.50
Transfer students entering in second year	570	70	29.50
Additional year	40	35	29.50

SPECIAL FEES

Application for Admission	$15.00
Graduation Fee	$10.00

Information concerning other special fees may be found in the *General Announcement.*

TEXTBOOKS AND MATERIALS

Students should allow at least $100 for textbooks and supplies. These are available from the University Bookstore and the School.

LIBRARY VISITS

Visits to libraries, under the direction of members of the Faculty, are a required part of the course.

BOARD AND RESIDENCE

Information regarding accommodation can be found in the *General Announcement* available from the Registrar's office, P.O. Box 6070, Station "A", Montreal, Quebec. H3C 3G1.

STUDENT SERVICES

Full information concerning Student Services is given in the *General Announcement.*

TRANSFER OF CREDIT

Students wishing to take courses towards their McGill degree at any university in the province of Quebec should refer to the section entitled "Academic Credit Transfer Agreement" in the *General Announcement.* In certain cases, credit may be granted for courses taken at other universities after a student's initial registration in the School. Approval of the Director is necessary and should be obtained in advance.

A student who has obtained a B.L.S. (Canadian) or a M.L.S. (American) with satisfactory standing from another accredited library school will be considered for admission into the second year.

A student who has completed the first year with satisfactory standing at another accredited Canadian library school with a two-year program (four half-year terms) may be permitted to transfer into second year. The applicant must have academic and other qualifications acceptable for entrance into McGill's M.L.S. program and have taken the core courses required in the first year M.L.S. at McGill. In such cases the full program of the second year, or its equivalent, must be taken at McGill.

3 FINANCIAL AID AND AWARDS

SCHOLARSHIPS

These awards are made after due investigation and recommendation to deserving students who require financial assistance. Application should be made to the Director of the School before March 1.

DR. G.R. LOMER SCHOLARSHIPS

Three annually of $660 each in honour of Dr. G.R. Lomer, former Director of the School.

ELIZABETH G. HALL SCHOLARSHIP FUND

$400 from the fund founded in honour of a former member of the McGill University Library staff.

ETHELWYN M. CROSSLEY SCHOLARSHIP FUND

$400 from the fund founded in honour of a former student of the School.

SYRA DEENA TARSHIS FLEISHMAN BURSARY

$200 from the fund founded in memory of a former student of the School.

Additional information concerning financial aid is detailed in the publication, *Postgraduate Awards, Fellowships and Bursaries* available from the Registrar's Office, P.O. Box 6070, Station "A", Montreal, Quebec H3C 3G1. The Canadian Library Association, 151 Sparks Street, Ottawa K1P 5E3, also compiles an annual list of *Scholarships, Bursaries and Loans in the field of Library Science.*

AWARDS

VIRGINIA MURRAY PRIZE FOR CATALOGUING

Awarded to the student in M.L.S. I who obtains the highest grade in the Organization of Materials course.

4 COURSES OF INSTRUCTION

FIRST YEAR COURSES

REQUIRED COURSES (24 credit hours)

(Total credit hours —27)

405-602A. INTRODUCTION TO LIBRARIANSHIP. (1 credit hour) The intention of this course is to provide: an overall introduction to the ideas and principles of librarianship; a forum in which to discuss general professional issues; and an opportunity to explore the characteristics of libraries and librarians as social agents.
Professor Dolan and Faculty

405-603A. SELECTION AND USE OF BOOKS AND RELATED MATERIALS. (3 credit hours) Basic principles of evaluation and selection of library materials. Attempts to develop knowledge of bibliographic aids for the acquisition of books, periodicals, and other print and non-print materials; current reviewing media; the nature and structure of the publishing industry; controversial materials and censorship in the context of selection; selection policies and their relationship to the library collection and to the library's users.
Professor Hall

405-604B. SELECTION AND USE OF BOOKS AND RELATED MATERIALS. (3 credit hours) The second half of 603A. For description see above.
Professor Hall

405-605A. REFERENCE MATERIALS AND METHODS. (3 credit hours) Students are introduced to reference materials and methodology. The fall term concentrates upon bibliography and the service aspects of reference work. The winter term concentrates upon factual information sources.
Professor McNally

405-606B. REFERENCE MATERIALS AND METHODS. (3 credit hours) This is the second half of the first year reference course. For a description, see the entry under 405-605A.
Professor McNally

405-607A. ORGANIZATION OF MATERIALS. (3 credit hours) The scope and objectives of this basic course are aptly expressed in its title. It implies that any type of material may be organized, and that cataloguing and classification are among the several means by which this can be accomplished. Though the approach to the course is theoretical, practical assignments serve as a reinforcement of the theoretical principles.
Professor Clement

405-608B. ORGANIZATION OF MATERIALS. (3 credit hours) This is the second half of this first year course. For a description, see the entry under 405-607A.
Professor Clement

405-609A. ADMINISTRATION OF LIBRARY OPERATIONS. (3 credit hours) The first part of this course deals with a study of the "organization" with examples drawn from the library environment. The second part deals with operations which are not usually performed by professional librarians such as the ordering and processing of books and periodicals, circulation, shelf work, and security.
Professor Lavergne

405-610D. INTRODUCTION TO DATA PROCESSING. (2 credit hours) The need for data processing in libraries; hardware, software, and system analysis and design; case studies in automated library processes.
Professor Batty

COLLOQUIUM
Visiting Lecturers

ELECTIVE COURSES (3 credit hours)

One of the courses marked * below is to be elected by M.L.S. I students.

SECOND YEAR COURSES

REQUIRED COURSES (4 credit hours)

(Total credit hours — 25)

405-620A. THEORY AND PRINCIPLES OF ADMINISTRATION. (3 credit hours) This course is concerned with the application of scientific management to the library situation. It deals with the work of the administrator under the broad headings of information gathering, planning, budgeting, organizing, staffing, directing, and controlling. The case study method is used to illustrate some of the problems encountered in management.
Professor Lavergne

405-611A. RESEARCH METHODS. (1 credit hour) An introduction to some methods of quantitative and non-quantitative research appropriate to the investigation of library problems. Attempts to introduce students to what is involved in planning, conducting and reporting on research thereby providing criteria helpful in evaluating published research in library science.
Professor Hall

ELECTIVE COURSES (21 credit hours)

Seven courses must be taken. Each course 3 credit hours. Not all courses are available in any one year.

405-612B. HISTORY OF BOOKS AND PRINTING. Surveyed are the development of writing, alphabets, and books from their inception, and of printing from its invention in the fifteenth century.
Professor McNally

405-613B. AUDIO — VISUAL MATERIALS. Introduction to audio-visual equipment and typical audio-visual programs in libraries, problems of selection, acquisition, evaluation, organization, housing, and use in various types of libraries.
Professors Dolan and Hillgartner

405-614B. PUBLIC LIBRARY ORGANIZATION AND DEVELOPMENT. The history, organization and development of public libraries with attention to current practices and problems. The importance of legislation to the concept of total coverage will be considered. Emphasis will be on Canadian libraries.
Norah P. Bryant and Visiting Lecturers

405-630B. LIBRARY COLLECTIONS: ASSESSMENT AND DEVELOPMENT. Standards for research collections and quantitative and qualitative criteria for evaluating them. Formulation of an acquisitions policy and elements of an acquisitions program. Inter-library relationships, library specialization, and cooperative programs as factors in the development of collections. Developing research collections in special subject fields.
Professor Hall and Walter Grossmann

405-631A. SYSTEMS ANALYSIS. Analysis and description of system objectives, resources, input, processing, output, problem areas and possible solutions. Students undertake problem projects in local libraries and information agencies.
Professor Batty

405-632B. LIBRARY APPLICATIONS OF DATA PROCESSING I. (Prerequisite: 405-610D.) The design and construction of a representative library sub-system using a prepared computer program package.
Stuart Fraser

405-633B. LIBRARY APPLICATIONS OF DATA PROCESSING II (Information Retrieval). (Prerequisite: 405-634A) Principles of information retrieval; index languages and information system design; analysis of a sample set of documents for entry into a laboratory model of representative information retrieval systems; search strategies and system evaluation.
Professor Batty

405-634A. PROBLEMS AND DEVELOPMENTS IN CATALOGUING AND CLASSIFICATION. Advanced studies in the problems inherent in several aspects of cataloguing and classification, the general solutions available (e.g. cataloguing codes, classification schemes, etc.), a critical examination of those solutions, and a study of current research into new solutions.
Professor Batty

405-635B. ADVANCED BIBLIOGRAPHY AND REFERENCE METHODS. (Prerequisite: 405-651A)

405-636A. GOVERNMENT PUBLICATIONS. The nature and scope of official publications of Canada, Great Britain, the United States, and the United Nations; their acquisition, bibliographic organization, and use.
Professor Dolan

405-637B. SCIENTIFIC AND TECHNICAL LITERATURE. Introduction to the process of communication and information requirements in the scientific community; sources of scientific and technical information; study of representative reference sources in specific fields of basic and applied science.
Professor Dolan

405-638B. BUSINESS LITERATURE. An introduction to the literature used in business. Most classes take place at the Library of The Royal Bank of Canada in Place Ville Marie. Various aspects of business are described, and students learn to handle reference questions in this field.
Miriam Tees

405-639A. SPECIAL LIBRARIES. A practical course on administration of special libraries using a simulation technique. Following a general introduction, the class, working in groups, sets up and puts into operation a hypothetical special library. Class discussion and visits to special libraries are of paramount importance.
Miriam Tees

* **405-640B. COLLEGE AND UNIVERSITY LIBRARIES.** This course first examines the history, development, and current organization of academic institutions and the development of their libraries. A study of the various types of academic libraries is then made as to their role, organization, administration, services, staff and physical facilities. This is completed by a discussion of large non-academic research libraries and national libraries.
Professor Lavergne

405-641A. SEMINAR IN PUBLIC LIBRARY PROBLEMS. (Prerequisite: 405-614B.)

405-642A. LIBRARY MATERIALS FOR CHILDREN. Survey of the historical background and development of children's literature; study of criteria for the selection and evaluation of books for children; consideration of current titles in relation to the child's reading interests, needs, and abilities.
Professor Dolan

* **405-643B. LIBRARY MATERIALS AND SERVICE FOR YOUNG ADULTS.** An attempt to understand adolescents in today's world and to become familiar with books and other library materials suitable for their interests and needs.
Professor Dolan

405-644B. RARE BOOKS. This is a brief, practical course on books in rare book departments, with mention of the different kinds of material to be found there and also a few of the special problems arising in the day-to-day running of such a department. Books, maps and prints are shown, attendance at a book auction is arranged, as well as a visit

to an antiquarian book shop; and visiting lecturers speak on their specialities.
Elizabeth Lewis and Visiting Lecturers

405-645A. ARCHIVES AND RECORDS IN LIBRARIES. This seminar aims at introducing librarians to the literature on archives, historical manuscripts, and records management which may prove useful to them as practising librarians in future. Definitions, principles, and terminology in these three fields are compared with those in library science. Emphasis is placed on records of the various media. Selection, conservation of writings, finding tools, and controls are examined. The impact of the computer and other technological developments are explored. A practical assignment, involving the description of unique papers in publishable form, is called for.
John Andreassen

405-646D. A RESEARCH PROJECT. (Prerequisite: 405-611A) Permission to undertake this is granted by the Director of the School to the exceptional student having the necessary experience or academic background.
Faculty

405-647A or B. INDEPENDENT STUDY. Permission to register for this is given to able students after consultation with the Director of the School. It usually consists of an exploration in depth of a topic in library science which is not emphasized or elaborated on in any other part of the curriculum. Students electing this option work under the direction of a faculty advisor.
Faculty

405-648B. CRITICAL ANALYSIS OF LIBRARY STUDIES. Attempts to develop the ability to analyze and evaluate library research reports through the reading and discussion of both classic and contemporary studies in the field of librarianship. The course illustrates in depth the content of course 611A. (Research Methods).
Professor Hall

405-649B. LIBRARY PLANNING AND ARCHITECTURE. This course is concerned at first with promotion work, the building committee, the program, the study of the region and the determination of the site. It then deals with the major areas and their relationships as well as with furnishings. Part of the course is given by an architect.
Professor Lavergne and David Bourke

* **405-650B. SERVICE TO CHILDREN IN SCHOOL AND PUBLIC LIBRARIES.** Introduction to objectives, functions, and services in school and public library work with children, including trends in the development of elementary and secondary school media centres; problems relating to the organization, administration and evaluation of children's services.
Professor Dolan

405-651A. REFERENCE SERVICE IN THE HUMANITIES AND SOCIAL SCIENCES. This course investigates the conceptual orientation of the disciplines and their constituent subjects. Also considered are the information needs of researchers in these fields and the extent to which reference sources meet these needs.
Professor McNally

405-652A. COMMUNICATION MEDIA AND THE LIBRARY. The intention of the course is to use a model of the communication process to describe the culture and society that is the context of libraries; to analyze the interaction process between the library and the community; to analyze and improve library operations by prediction based on the model.
Kevin J. McGarry

* **405-653B. THE ORGANIZATION OF KNOWLEDGE.** Studies in the development and organization of knowledge in society essential to understand information flow and information access. Interaction of knowledge and society; development of disciplines; relevant aspects of creativity, concept formation, learning and memory, linguistics, semiotics and communication; problem solving; information flow and information system design.
Professor Batty

405-654B. CONSTRUCTION AND MAINTENANCE OF INDEX LANGUAGES. (Prerequisite: 405-634A). Analysis of concepts and terminology of a special subject field; development of conceptual categories; recognition of a priority of categories; construction of (a) a classification scheme (b) a subject heading structure, and (c) a thesaurus for post-coordinate indexing.
Professor Batty

Courses in Another School or Faculty

A maximum of 12 credit hours (i.e. four half courses) may be taken with permission provided students have the necessary prerequisites. The following are among the courses suggested:

PROBLEMS IN SEMANTICS
INTRODUCTION TO LOGIC
INTRODUCTION TO THE STUDY OF LANGUAGE
LANGUAGE AND THOUGHT
INTRODUCTION TO STATISTICS
GOVERNMENT OF CANADA
PRINCIPLES OF PUBLIC ADMINISTRATION
COLLECTIVE BARGAINING
SOCIOLOGY OF THE PROFESSIONS
INTRODUCTION TO SOCIAL PSYCHOLOGY
SOCIOLOGY OF SCIENCE
HISTORY OF SCIENCE
HISTORY OF BIOLOGY
EDUCATION AND SOCIETY IN QUEBEC

THIRD WORLD LITERATURE
20TH CENTURY CANADIAN LITERATURE
THE FILM
STUDIES IN COMMUNICATIONS
LA LITTÉRATURE QUÉBECOISE

HISTOIRE CULTURELLE DU QUÉBEC
LIVRES ET SOCIÉTÉ QUÉBECOISE
LITTÉRATURE FRANCOPHONE COMPARÉE
RUSSIAN LANGUAGE
OTHER FOREIGN LANGUAGES

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McGill University

Faculty of Graduate Studies and Research 1976 — 77

Section "I"

Management

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*The official McGill University mailing address is:
McGill University, P.O. Box 6070, Station A
Montreal, Quebec, Canada H3C 3G1

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CALENDAR FOR SESSION 1976-77

1976

September 7, Tuesday	Test for College Entrance Mathematics for 1st year students.
September 7, Tuesday	Registration for 2nd year students.
September 10, Friday	Registration for 1st year students.
September 7, Tuesday to September 10, Friday	Orientation for 1st year students.
September 13, Monday	Classes begin for 1st and 2nd year students.
October 11, Monday	Thanksgiving Day. Lectures cancelled.
November 9, Tuesday	Fall Convocation.
December 10, Friday	Classes end for 1st and 2nd year students.
December 13, Monday to December 23, Thursday	Examination period for 1st and 2nd *year students.*
December 25, Saturday	Christmas Day. Administrative offices closed from 5:00 p.m. Friday, December 24 to 9:00 a.m. Monday, January 3.

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January 17, Monday	Classes resume for 1st and 2nd year students.
February 1, Tuesday	Deadline for applying for graduate fellowships available through the Faculty of Graduate Studies and Research.
April 8, Friday to April 11, Monday	Easter. Administrative offices closed from 5:00 p.m. Thursday, April 7 until 9:00 a.m. Tuesday, April 12.
April 15, Friday	Lectures end for 1st and 2nd year students.
April 18, Monday to May 6, Friday	Final examination period for 1st and 2nd year students.
May 23, Monday	Victoria Day. Administrative offices closed.
June 7, Tuesday and June 8, Wednesday	Convocations.

1 STAFF

1.1 ADMINISTRATIVE OFFICERS

ROBERT E. BELL, C.C., B.A., M.A.(U.B.C.), Ph.D.(McG.), D.Sc.(U.N.B., Laval), LL.D.(Tor.), F.R.S., F.R.S.C.
Principal and Vice Chancellor

EIGIL PEDERSEN, B.A.(Sir G. Wms.), M.A.(McG.), D.Ed.(Harv.) **Vice-Principal (Academic)**

LEO YAFFE, B.Sc., M.Sc.(Man.), Ph.D.(McG.), F.C.I.C., F.A.P.S., F.R.S.C.
Vice-Principal (Administration)

ALLAN C. McCOLL, D.F.C., B.Com.(McG.), C.A.
Vice-Principal (Finance)

WALTER F. HITSCHFELD, B.A.Sc.(Tor.), Ph.D.(McG.), F.R.Met.S.
Vice-Principal (Research)

COLIN McDOUGALL, D.S.O., B.A.(McG.)
Secretary General

JEAN-PAUL SCHULLER, B.A.(Ott.) **Registrar**

STANLEY J. SHAPIRO, A.B.(Harv.), M.B.A., Ph.D.(Wharton)
Dean of the Faculty of Management

ALBERT D. TEITLEBAUM, B.Sc., M.Sc., Ph.D.(McG.)
Associate Dean of the Faculty of Management

ALBERT F. BANVILLE, **Assistant to the Dean**

SANDRA GUADAGNINO, **Admissions Officer**

DIANNE YAXLEY, **Administrative Secretary**

1.2 MEMBERS OF FACULTY

L. R. AMEY, B.Ec.(Adelaide), B.A., Ph.D.(Nott.)
D. E. ARMSTRONG, B.A., B.Com.(Alta.), Ph.D.(McG.)
F. BAIRSTOW, B.S.(Wis.),
W. M. BALKE, B.Sc.(Alta.), M.Com.(Tor.), D.B.A.(Colorado)
P. C. BRIANT, B.Com., M.B.A.(McG.), Ph.D.(Mich.), C.A.
E. BURNETT, Dip.Ed.(Aber.), B.A.(Sir G. Wms.), M.Sc.(McG.)
K. F. BYRD, B.A., M.A., B.Sc.(Lond.), LL.D.(Mt.All.), Emeritus Professor (McG.), C.A.(Wales)
R. J. CALANTONE, B.A., M.B.A.(Canisius)
G. S. CAVADIAS, B.Sc.(Athens), M.Sc.(McG.), Ph.D.(C.Lond.)
P. CHANT, B.A.(Mich.), Ph.D.(Northwestern)
J. P. CHATEAU, B.Ec.(Liège), M.Ec.(Montr.), M.Sc.Ec.(Grenoble), Ph.D.(Paris)
R. G. COOPER, B.Eng., M.Eng.(McG.), M.B.A., Ph.D.(W.Ont.)
R. DARMON, Dip.ésEc.(Paris), M.B.A.(Col.), Ph.D.(Wharton)
S. DOBROVOLSKY, M.A., Ph.D.(Col.)
D. H. DRURY, B.Com., M.B.A.(McMaster), Ph.D.(Northwestern), R.I.A.(S.I.A.)
J. A. DUFF, B.A., M.A.(Camb.), C.A.
W. H. ELLIS, B.A., (Qu.), M.B.A.(W.Ont.)
H. FALK, B.Ac., Dip.Bus.Admin.(Hebrew), M.B.A.(Tel-Aviv), Ph.D.(Hebrew), C.P.A.
D. FEWINGS, B.Sc.(Man.), M.B.A., Ph.D.(Tor.)
D. FOWLER, B.Sc.(Lond.), M.B.A., A.C.G.I.(Tor.)
P. FRIESEN, B.A., M.A.(Sask.), Ph.D.(Stan.)
M. E. GOLDBERG, B.A.(McG.), M.A.(Col.), Ph.D.(Ill.)
S. GOLDENBERG, B.A., M.A.(McG.)
L. A. GORDON, B.Sc., M.B.A.(S.U.N.Y., Albany), Ph.D.(Rensselaer)
G.J. GORN, B.A.(Sir G. Wms.), M.Sc.(L.S.E.), Ph.D.(Penn.State)
R. GOSSELIN, B.A., M.I.R.(Montr.), M.B.A.(Indiana)
A. C. GROSS, B.Sc.E.E., M.B.A., (Case Western Reserve), Ph.D.(Ohio State)
G. E. HENDRIX, B.A.(St. Mary's), M.A. (Manhattan), Ph.D.(Case Western Reserve)
H. R. HOWSON, B.Com.(Tor.), M.Com.(McG.), C.A.
R. N. KANUNGO, B.A., M.A.(Patna), Ph.D.(McG.)
M. F. R. KETS DE VRIES, M.B.A., Ph.D.(Harv.), Dr. Econ.(Amsterdam)
P. KHANDWALLA, B.Com.(Bombay), M.B.A.(Wharton), Ph.D.(Carnegie-Mellon), C.A.(India), M.S.I.A.
R. G. LAYBOURN, M.A.(Edin.), C.A.
G. LEROY. Ingenieur INSA, M.Sc.(Stan.), Ph.D.(Calif.)
R. J. LOULOU, M.Sc., Ph.D.(Calif.)
A. R. MARSHALL, B.Com.(Dal.), M.A.(McG.), M.B A.(Wis.), C.A.
H. MINTZBERG, B.Eng.(McG.), B.A., S.M., Ph.D.(M.I.T.)
R. N. MORRISON, B.Eng.(McG.), M.A.(Oxon.)
W. H. PUGSLEY, B.Com., Ph.D.(McG.), M.B.A.(Harv.)
H. RORKE, B.Com.(Qu.), M.B.A.(Calif.), M.S.(Roch.), Ph.D.(Lond.)
P. J. SANDIFORD, B.A., M.A., Ph.D.(Tor.)
S.J. SHAPIRO, A.B.(Harv.), M.B.A., Ph.D.(Wharton)
J. G. SMITH, B.A.(Nott.), M.A., Ph.D.(Ohio)
A. D. TEITLEBAUM, B.Sc., M.Sc., Ph.D.(McG.)
G. A. WHITMORE, B.Sc.(Man.), M.Sc., Ph.D.(Minn.)
H. D. WOODS, B.A.(U.N.B.), M.A.(McG.), LL.D.(U.N.B.), F.R.S.C.
R. W. WRIGHT, A.B., M.B.A.(Dart.), D.B.A.(Indiana)
M. YALOVSKY, B.Sc., M.Sc.(McG.)

2 M.B.A. PROGRAM — GENERAL INFORMATION

2.1 HISTORY

In 1962, after several years of design and preparation, McGill's Faculty of Graduate Studies and Research established the Graduate School of Business. During the year following, new faculty members were hired and considerable time was devoted to the final formulation of a new M.B.A. curriculum. The first class was admitted and teaching began in Duggan House in September 1963.

Next door, in Purvis Hall, the (undergraduate) School of Commerce, part of the Faculty of Arts and Science, continued to function as a separate entity.

An ever-increasing demand for expansion, requiring a controlled and coherent policy which would relate both graduate and undergraduate programs, resulted in the merger of both schools as the Faculty of Management less than five years later, on June 1, 1968.

The new faculty, the most recently formed of McGill's twelve faculties, embraces all management and business education at the University. In 1972 the faculty moved to the modern facilities of the new Samuel Bronfman Building, in close proximity to the business and commercial heart of downtown Montreal.

Located at the heart of the island metropolis of Montreal, McGill University's community weaves in many of its activities with those of the multicultural city around it. This interaction adds an extra dimension to the teaching and research of McGill's Faculties of Agriculture, Arts, Science, Dentistry, Education, Engineering, Graduate Studies and Research, Law, Medicine, Music and Religious Studies and their many schools, institutes, departments, centres, and research units.

Despite this activity, to the eye the McGill campus retains a restful beauty. An avenue, lined with elms planted by former Principal Sir William Dawson, leads from the main entrance gates on Sherbrooke Street through the green lower campus to the Quebec gray stone of the Arts Building. Seen from a city skyscraper, the campus on the lower slopes of Mount Royal, together with the grounds of the Royal Victoria Hospital (one of the University's main teaching hospitals) and the city reservoir, seems to merge in with the mountain-top park.

When bequeathing his 46-acre property and £10,000 for a college, James McGill little realized that Montreal would one day surround his estate and the mountain as well. At his death in 1813, Montreal was only a small town on the bank of the river several miles below his property. An emigrant from Scotland, fur trader, Montreal businessman, civic and political leader and military man, he would have been amazed at the growth of Montreal and the size and complexity of the University he founded.

The University's Royal Charter was granted by King George IV in 1821. Today, more than 19,000 students from around the world study for their degrees on the Montreal campus (which now covers an area of almost seventy acres) and at Macdonald College at the west end of the island. Macdonald College was established in 1907 for studies in agriculture, teacher training, and household science. The Centre for Continuing Education at McGill and Macdonald provides between 13,000 and 14,000 Montrealers with the opportunity to continue their education at night. Countless other Montrealers participate in the many conferences, lectures, musical and dramatic productions, film showings, etc., which take place on the two campuses.

2.2 HOWARD ROSS LIBRARY OF MANAGEMENT

The Howard Ross Library of Management, named in honour of a former Dean of the Faculty and Chancellor of the University, is conveniently located on the second floor of the new Bronfman Building. The collection covers business and management, finance, accounting, marketing, industrial relations, industrial psychology, computer programming, statistics, taxation and economics. There are over 184,000 volumes of books, pamphlets, periodicals corporation and other reports and monographs, together with a good collection of government documents.

The library serves a wide community. Most business concerns in the Montreal area, as well as students and staff from the other McGill faculties, use its resources.

Students of the Faculty of Management are equally privileged in having full access to most of the 2,000,000 publications provided by the University Library System, many of these located in McGill's specialized collections. The Redpath and the McLennan Libraries house an extensive general collection of approximately 900,000 volumes.

2.3 AIMS AND APPROACH OF THE M.B.A. PROGRAM

Our primary objective is to help the student acquire the necessary knowledge and skills to analyze and solve complex organizational problems including problems of change in business, government and other institutions.

This primary objective reduces to the following explicit sub-objectives:

1. The student will acquire a knowledge of the fundamental concepts and theories necessary for effective management. The first year of the program is devoted to basic theories and concepts in both the underlying disciplines and the functional areas of management.

2. The student will develop skills in identifying, defining, analyzing and solving complex problems.
3. The student will become more effective in dealing with people. The program will both present the relevant concepts and train the student in interpersonal areas such as group problem-solving, consultation and leadership.
4. The student will become more self-aware, responsible and self-reliant. Various phases of the program are intended to enhance these traits, for example, activities to increase the student's awareness of his personal values, beliefs and goals; ambiguous problem-solving tasks; greater responsibility for his own learning goals.

Most management education programs place their emphasis on the acquisition of knowledge and analytical techniques. Few programs use the knowledge and techniques to develop the problem-solving skills of the learner. Even less do programs encourage the self-development and autonomy of the learner. McGill's M.B.A. program does not undervalue the worth of knowledge and analytical techniques. In fact, the major portion of the first year of the program is devoted to basic concepts and theories and to mastering analytical techniques. However, the program is also deliberately designed to enhance such managerial skills as problem-solving, decision-making, researching, communicating, consulting and interpersonal skills. The design of the second year of the program permits the student to clarify his own learning goals and to select learning experiences (research paper, electives, projects) that contribute to the achievement of his objectives.

2.4 REQUIREMENTS FULL-TIME PROGRAM

Requirements for admission include:

a) an undergraduate degree from an accredited college or university (in any faculty) with a Grade Point Average of at least 3.0 out of a possible 4.0, or at least a B average.

b) The Graduate Management Admission Test and the Test of English as a Foreign Language. The latter is required of students whose mother tongue is not English.

The program commences in September of each year and applications must be received by May 15. (Early applicants will be given preference.) Applicants are advised of the admissions decisions as soon as all supporting documents and test score(s) are received. An official score report on the GMAT, taken within the past 5 years, with a minimum score of 500, is preferred. However, the undergraduate record, GMAT score, TOEFL (where applicable), work experience and letters of recommendation are the criteria used in making selections. A personal interview is not mandatory although candidates may be requested by the Admissions Officer to appear for such an interview.

Students who wish to work upon completion of their undergraduate degree may apply to our program and have their acceptance honored any time in the next three years.

However, the deposit fee will not be honored so you must inform us of your intentions by the deadline date in your acceptance letter in order to obtain a refund.

2.5 APPLICATION PROCEDURE FOR ADMISSION

a) Complete the application form, Personal Background Sheet and address labels. Return the first 3 copies of the application form along with the Personal Background Sheet, the $15 fee and the self-addressed labels to the address below:

Admissions Officer, M.B.A. Program,
Faculty of Management,
McGill University,
1001 Sherbrooke St. West,
Montreal, Quebec, Canada H3C 1G5.
(514)392-4336

Please note that a file will not be opened until an official application *with the $15 fee* is received. Please make sure you have indicated whether you are applying for the first or second year of the M.B.A. program. (McGill graduates are exempt from paying the application fee.)

b) Arrange to have duplicate copies of complete transcripts of your undergraduate marks (and graduate, if any) forwarded to us by your university.

c) Arrange to have two letters of reference forwarded to us by current, or former, university teachers. (Those more than 3 years out of university may ask employers to provide references.)

d) Arrange to have the Graduate Management Admission Test score and the Test of English as a Foreign Language score (where applicable) forwarded to us.

e) Only if space allows will applications received after May 15 be considered.

2.6 GRADUATE MANAGEMENT ADMISSION TEST

The Graduate Management Admission Test (GMAT) is administered by the Educational Testing Service. It is usually held on a Saturday in the months of January, March, July and November, at the locations and times shown in the Bulletin of Information for Candidates. It is recommended that applicants write the test in November and, in any event, no

later than March. (It usually takes three weeks to one month for the test scores to be forwarded to us.)

For a copy of the Bulletin and registration forms, write to the Educational Testing Service, Box 966, Princeton, N.J. 08540, U.S.A. Applications must be received by the Educational Testing Service at least three (3) weeks prior to the test date. The arrangements for taking the test, including payment of a $12.50 fee, are made directly with the Educational Testing Service.

2.7 TEST OF ENGLISH AS A FOREIGN LANGUAGE

The main purpose of this test is to determine the English proficiency of individuals whose native language is not English. The test is held on Saturdays in the months of January, March, June and October. Applications must be received by the Educational Testing Service at least five (5) weeks prior to the test date. The fee for this test is also $12.50. For a copy of the Bulletin of Information, write directly to the Test of English as a Foreign Language, Box 899, Princeton, N.J. 08540, U.S.A. (It takes approximately one month for us to receive these scores.)

2.8 TRANSCRIPTS

Applicants must arrange to have two official transcripts of marks from all universities attended forwarded to the Admissions Officer directly from the universities. Copies of transcripts received from the applicants will *not* be accepted, even if marked "official".

2.8.1 McGill Graduates

It is the responsibility of each applicant to request official transcripts from the Registrar's Office even if they are former McGill graduates. Students who have followed courses through the Centre for Continuing Education must also request two official transcripts to be forwarded to the Admissions Officer by the Centre for Continuing Education.

Transcripts are confidential and neither the Registrar's Office nor the Centre for Continuing Education will issue transcripts unless they have first received a request from the applicant concerned.

2.9 LETTERS OF RECOMMENDATION

Applicants must arrange to have two referees send us letters of recommendations. Normally letters from former professors are required. However, applicants more than three years from graduation may substitute referees qualified to judge their capabilities. In either event, the letters of reference must deal with the applicant's suitability to undertake graduate studies in business. (Please note that there are no special forms provided for this purpose.)

2.10 FOREIGN APPLICANTS

1. We are unable to waive or defer either the application fee or tuition fee requirement for foreign students. Applications received without the $15.00 application fee will not be processed.
2. There is no financial aid to bring foreign students to study in Canada. If an applicant has been selected to receive one of our awards, the financial aid is awarded only after registration in September. Therefore, foreign applicants must rely on their own resources to enter Canada.
3. Foreign students should contact the nearest Canadian Embassy or Consulate regarding student visas and immigration to Canada. In countries where there is no Canadian representation, students may apply to representatives of the British government for visas. Procurement may take up to three months. The Immigration Department by authority of the Canadian Government does not allow foreign students into Canada without proof of financial support for the duration of their stay in the country. Therefore, each applicant must supply us with a bank reference proving he is financially able to support himself for his two years of study at McGill. This should be forwarded to the Admissions Officer at the time of application.
4. We cannot assist in finding employment for foreign students. The regulations governing foreign students working in Canada should be checked with the nearest Canadian Embassy or Consulate (visas must be checked too.)
5. Foreign students wishing to work in Canada before applying to McGill, in order to finance their studies, must obtain landed immigrant status. Apply to the Canadian High Commission for landed immigrant status.

2.11 PROCEDURE FOR ACCEPTING OFFER OF ADMISSION

A registration deposit of $50 will be required from those admitted into the M.B.A. program. Cheques or money orders for $50 should be made payable to McGill University: (1) the $50 fee is payable immediately upon receipt of our letter of acceptance and reserves a place for you; (2) if the $50 fee is not paid by the date specified in your letter of acceptance, we will assume that you are no longer interested in the program and no reservation will be made for you; (3) the fee is applied to tuition fees for those who inform us by the specified date that they will be joining our program and who, in fact, register by the given date of registration; (4) the fee is forfeited if accepted candidates do not inform us by the specified date that they do not intend joining our program for the forthcoming academic year; (5)

the fee is refundable if accepted candidates inform us by the specified date that they will not be joining our program for the forthcoming academic year.

2.12 TEST FOR COLLEGE ENTRANCE MATHEMATICS

All students entering the M.B.A. program are required to demonstrate an adequate knowledge of college entrance mathematics. Shortly before registration, the student will be required to sit a Placement Test and those students not performing satisfactorily will be required to take a non-credit remedial course, "Survey of Basic Mathematics", in the first term. This course would have to be taken through the Centre for Continuing Education in the evenings. It is suggested that all applicants review Schaum's College Algebra text prior to writing this test.

Further details regarding topics covered in the test will be forwarded at the time of acceptance into the program.

Immediately following the Test for College Entrance Mathematics, a test to determine sections for the Data Processing and Computers course 273-631 will be administered. See page [17] for details.

2.13 PHOTOGRAPHS

Students accepted into our program must submit three passport-size photographs for inclusion in our student record booklets within 30 days of their acceptance. All photographs must be in our possession by the end of July at the very latest.

2.14 REGISTRATION

a) All students must register during the normal registration period as indicated in the Calendar of Dates, until the degree is awarded, and pay the appropriate tuition fee or additional session fee of $40.

b) Students who fail to register during the normal registration period may do so later on the date designated by the University for late registration, upon payment of a late registration fee.

2.15 FEES

All students are required to pay **at least half** of the total sessional fee 10 days after they register.

RESIDENCE. Students entering residence are required to pay **at least half** of the residence fee 10 days after they register.

LATE PAYMENT FEE. If payment is received after the time allowed, the following penalties will be assessed: $10 if payment is received within 30 days of the established due date, $25 if payment is received after 30 days of the established due date.

SECOND INSTALMENT. The second instalment of fees will be payable during the second week of January. The exact date will be announced at registration. Students whose tuition fees will be paid by a scholarship, fellowship, or by some outside agency must make note of this fact on their registration forms in the space provided.

2.15.1 Late Registration Fees

A $25 late fee will be charged for students registering after the normal registration period.

2.16 IDENTITY CARDS

Students are advised both prior to, and at the time of, registration of the dates on which pictures will be taken for I.D. cards. Pictures are usually taken at David Thomson House, 3650 McTavish Street, at the beginning of October.

2.17 CLASSIFICATION OF STUDENTS

a) Full-time students are those taking all or almost all of the courses required in that academic year.

b) Half-time students are those taking approximately half the number of courses required for the degree in that academic year.

c) Part-time students are those in the M.B.A. I and M.B.A. II evening program.

d) Direct entry Diploma students are those who are following the equivalent M.B.A. I courses in the evening with the Centre for Continuing Education.

e) Special students are those who are not working towards the degree. They may take no more than two full courses.

f) Visiting students are those from another university taking a course in our Faculty.

g) Additional session students are those who are working beyond the second year to complete their degrees and who are paying the $40 fee to maintain their registration.

2.18 ELECTIVES OFFERED IN OTHER DEPARTMENTS IN McGILL

Students who wish to take an elective offered in another department in McGill must first obtain approval from the M.B.A. Program Co-ordinator. Once approval is obtained, the student must obtain permission from the department offering the course before registering for the course.

2.19 ACADEMIC CREDIT TRANSFER AGREEMENT

All Quebec universities have agreed to permit transfer of academic credit and course fees between themselves up to a maximum of two full courses in any one year. The agreement is intended to include only those courses not offered at the home university and which fit into the student's program requirements. Authorization for a graduate student to Transfer courses must be obtained from the Program Co-ordinator. Once approval has been obtained, the student must complete a Transfer Credit form, obtainable from the Registrar's Office.

2.20 WITHDRAWALS

Students wishing to withdraw from the program must complete a Withdrawal form available from the Registrar's Office or from the Faculty of Graduate Studies. Students will not be considered as officially withdrawn until this form is completed. Students who drop out but who do not complete this form will be billed for the full tuition.

2.21 CHANGE OF ADDRESS

Students who change address during the year must complete a Change of Address form. These are available from the Admissions Officer. It is very important that students inform us immediately of any change of address.

We would also appreciate being kept informed of address changes after graduation.

2.22 VERIFICATION FORMS

A verification form, which provides an unofficial copy of the student's record to date, will be mailed out by the Faculty of Graduate Studies and Research during the year. It is extremely important that the student check it carefully and inform the Faculty of Graduate Studies and Research of any changes so that the student's record will be correct at all times.

2.23 SPECIAL POINTS REGARDING THE M.B.A. PROGRAM

a) The M.B.A. program is a two-year program. It cannot be taken in one year.

b) There are two semesters. The academic year begins in September and ends May 1. (Please note there is no January admission.)

c) It is up to the applicant to supply all the documents required. You must also have your GMAT and TOEFL scores sent to us.

d) Applicants must make their own arrangements for accommodation. (Refer to Facilities section of Announcement.)

e) GRADING: The pass mark for each course is 65%. Any student failing two courses in one term or three courses in two terms can expect to be asked to withdraw from the program. Students in first year will be permitted to take two supplemental examinations which are normally held in July.

CREDITS, EXEMPTIONS: Advanced standing is granted for graduate work in business and related areas completed after earning a bachelor's degree, provided the course taken is deemed to be equivalent to one offered in the M.B.A. program. First year credit for no more than 10 half courses may be granted for graduate work done elsewhere.

Students who have completed undergraduate courses equivalent to required courses may receive exemptions from required courses by completing a special form for this purpose after registration. When an exemption is granted, the student should substitute an elective for the required course.

Note that no credits or exemptions will be given for second year courses.

3 CURRICULA AND PROGRAMS

3.1 ENTRY TO SECOND YEAR OF PROGRAM

Each year qualified students are admitted directly into the second year of the M.B.A. program, on either a full-time or part-time basis.

Candidates may qualify for admission into the M.B.A. II program as follows:

1) Upon successful completion of the first year full-time program.
2) Upon successful completion of the Diploma in Management program.

For more information on the part-time program contact:

Miss Brenda E. Martin,
Supervisor, Part-Time Programs,
Faculty of Management,
McGill University,
1001 Sherbrooke St. West,
Montreal, Quebec.
H3A 1G5
(514)392-5938

3.1.1 Transfers From Other M.B.A. Programs

Students who have completed the first year of the M.B.A. program at another university and who wish to transfer into the second year of the program at McGill must state their reasons for the transfer and forward detailed course descriptions, texts used, a

copy of their Graduate Management Admission Test score and arrange to have their university send two official transcripts of their undergraduate and graduate marks to date before a decision can be made as to their acceptability.

Students who have completed the majority of work towards the M.B.A. degree at another university and who wish to transfer into our program to complete two or three electives will be accepted provided the home university is willing to grant them their degree. In such cases, a McGill M.B.A. would not be conferred.

Those interested in applying for entry into the second year of the full-time program should apply to:

Admissions Officer, M.B.A. Program,
Faculty of Management,
McGill University,
1001 Sherbrooke St. West,
Montreal, Quebec.
H3A 1G5
(514)392-4336

3.2 DIPLOMA PROGRAM

Prerequisite:
Survey of Basic Mathematics (non-credit)

1. Basic Management Statistics (half course)
2. Finance I (half course)
3. Economic Analysis of Business (half course)
4. The Economic Environment of the Firm (half course)
5. Behavioural Science (half course)
6. Data Processing and Computers (half course)
7. Marketing Management (half course)
8. Accounting — A Management Approach (half course)
9. Introduction to Modelling Methods in Management (half course)
10. TO BE ANNOUNCED (half course)

The above ten (10) half-courses, offered by the Centre for Continuing Education in the evening, are equivalent to those offered in the first year of our full-time program. Upon successful completion of these courses, a student may apply for direct-entry into the second year of our program on either a full-time or a part-time (evening) basis. Applicants for direct-entry must obtain an average in excess of 70% on the above courses and must arrange to have two official transcripts of their Diploma marks forwarded to the Admissions Officer by the Centre for Continuing Education.

All students intending to register for the Diploma in Management program are required to take the Test for College Entrance Mathematics through the Centre (see page).

An announcement containing more information about the courses in the above program may be obtained from:

Centre for Continuing Education,
McGill University,
Strathcona Hall,
772 Sherbrooke St. West,
Montreal, Quebec.
H3A 1G5
Telephone: (514) 392-5244

3.3 M.B.A. II PART-TIME EVENING PROGRAM

The second year of the M.B.A. program may also be completed on a part-time basis over a three-year period. For further information on this program, write directly to:

Miss Brenda E. Martin, Supervisor
Part-Time Programs,
Faculty of Management,
McGill University,
1001 Sherbrooke St. West,
Montreal, Quebec.
H3A 1G5
(514) 392-5938

3.4 M.B.A. PROGRAM: GENERAL OUTLINE

McGill's Management Program, covering two academic years, leads to the degree of Master of Business Administration. The diagrams below provide an overview of the program and brief descriptions of the various stages follow:

3.4.1 First Year

Prerequisite:
Survey of Basic Mathematics (non-credit)

1. Basic Management Statistics (half course)
2. Finance I (half course)
3. Economic Analysis of Business (half course)
4. The Economic Environment of the Firm (half course)
5. Behavioural Science (half course)
6. Data Processing and Computers (half course)
7. Marketing Management (half course)
8. Accounting — A Management Approach (half course)
9. Introduction to Modelling Methods in Management (half course)
10. TO BE ANNOUNCED (half course)

Second Year

Required Course

Policy and Organizational Theory (full course)

Electives

A student may choose either (a) six electives and a Research Paper or (b) eight electives. All electives in the MBA program are half courses.

General Management Stream

This stream is available to students who wish to cover a broad range in the second year of their program. They may choose their eight electives (six if they do a Research Paper) without following a specified sequence although they must ensure that they have the necessary prerequisite course(s) where these apply.

Concentrations

The electives open to a student will depend on his area of concentration. The concentrations available are:

Accounting & Finance, Behavioural Science and Personnel, Finance, Industrial Relations, International Business, Management Information Systems, Management Science, Marketing, and Policy.

Notes:

1. Details of the sequence of courses required in each concentration are shown on pages (11-13)
2. Course descriptions for electives are shown on pages (13-18)

4 COURSES OF INSTRUCTION

4.1 M.B.A. I PROGRAM

First year students are required to take the following courses:

277-613 BASIC MANAGEMENT STATISTICS. (Prerequisite: College entrance mathematics). Topics covered include: descriptive statistical analysis, common probability distributions (binomial, Poisson, normal), sampling procedures, sampling distributions, estimation, hypothesis testing, distribution-free procedures (tests of goodness of fit and independence), simple and multiple regression, correlation, one-way analysis of variance, classical time series analysis, Bayesian probability analysis. The course stresses the use of computer programs as an aid in statistical analysis.

271-611 ACCOUNTING: A MANAGEMENT APPROACH. This course examines the role of accounting both as an external and an internal information system. However, the stress is primarily on the internal use of accounting data by management for planning and control purposes. The basic concepts of financial accounting are examined and topics covered include the measurement of income, statement analysis, price level changes and aspects of business combinations. In the planning and control area, topics covered include cost and control concepts, costing systems, budgeting, differential cost analysis and the measurement of performance.

279-692 ECONOMIC ANALYSIS OF BUSINESS. This course is primarily devoted to demonstrating the applications of economic theory and methodology in solving business problems. The following topics are discussed in some detail: demand, production, cost analysis, pricing, growth, concentration, profitability, and resource allocation of the firm. Marketing and sales forecasting techniques are also introduced briefly, and attention is given to opportunities for the application of incremental analysis.

273-631 DATA PROCESSING AND COMPUTERS. This course in an introduction to the applications of electronic computers in business and in industry. It covers the following topics: concepts of the logical organization of computers; characteristics of procedure-oriented languages and of executive systems; current trends in computer systems (time-sharing and multiprogramming); and current computer applications and future potentialities, with emphasis on business data processing. The computer course is designed as a service course to the core units. Students will be assigned projects by instructors of core units which will require the use of computers to solve. In the time the students allot to computers they will receive instruction and engage in computer skill development exercises as well as receive guidance by a computer expert on their core unit projects. The design of this course encourages the student to use the computer in the solution of management problems rather than to view computer programming as one more subject to master on the way to obtaining a degree.

There are two sections of this course. The first term section is for students who have had previous experience using computers (e.g. some programming); the second term section is for students with no previous experience using computers. A test will be given immediately after the Test for College Entrance Mathematics to determine sections.

272-621 BEHAVIOURAL SCIENCE. The course is designed to develop an understanding of the processes that underlie various behavioural phenomena. It is believed that many managerial decisions depend upon a sound knowledge of the dynamics of human behaviour. The course analyzes some of the basic concepts in the area of social psychology and discusses the implication of these concepts for the management. Stressing the development of an awareness of the methodological problems in behavioural research, the course introduces the student to some of the cognitive and dynamic processes within the individual. The processes contribute to the individual's interaction with other individuals within groups and organizations.

277-612 INTRODUCTION TO MODELLING METHODS IN MANAGEMENT. (Prerequisite: College entrance mathematics). Topics covered include: Introduction to Decision Analysis and Risk Attitudes, Inventory Control, Simulation, Linear Programming Models and Extensions. The course

stresses the formulation of problems and their solution by standard methods of computer packages.

274-641 FINANCE I. (Prerequisite: Accounting — 277-611 and Economic Analysis of Business — 279-692). An introduction to financial management and the role of finance, both within the firm and the economy as a whole. The institutional framework of the firm is discussed, including legal forms, taxes, financing instruments and the capital markets. An introduction to the analytics of finance is presented including the pricing of financial instruments, simple models of capital market equilibrium, the financial structure of the firm, cost of capital, dividend policy, investment criteria for new capital spending proposals, and working capital management.

279-691 THE ECONOMIC ENVIRONMENT OF THE FIRM. This course examines the main macroeconomic mechanisms, i.e. income determination and the multiplier theory as well as fiscal policy; the level of investment, the demand for money and the rate of interest as well as the Canadian banking system and deposit creation; the general equilibrium of product and money markets, and monetary and fiscal policies; the dynamics of investment, the employment sector, and the price level and inflation; the balance of payments and international trade as well as methods of dealing with balance-of-payments disequilibria.

275-651 MARKETING MANAGEMENT I. This course is designed to familiarize the student with the problems faced by the marketing executive and the role of marketing in the corporation and in society. It is increasingly evident that the needs and desires of the customer are of critical importance to the success of profit and non-profit organizations. Students learn to analyze buyer decision processes, as well as the surrounding economic, social, political technological and competitive environment and to convert this analysis into a reasonable marketing strategy. The first part of the course is devoted to measuring marketing opportunities and customer desires. The course then covers the topics of product policy, pricing decisions, distribution, advertising and sales force management. Through lectures, discussions of readings and cases, the student acquires the tools and methods of marketing management, and learns to apply these in the solution of marketing problems.

4.2 M.B.A. II PROGRAM

Required Course. All second year students are required to take the following course:

272-630 POLICY AND ORGANIZATIONAL THEORY. This course consists of two parts. The first part is aimed at studying how organizations are designed. The focus is on the relationship between the nature of the external environment of the organization, the technology it uses, the management style, the organizational structure, the behaviour of individuals and groups in the organization, and its performance.

The second part provides the student with a thorough knowledge of the managerial policy-making process. This is approached in a theoretical way by delving deeply into descriptive theory on topics such as goal systems, managerial work, unprogrammed decision-making and strategy-making, and by assessing the relevance of management science techniques at the policy level.

One essential element of the course is a field study the results of which are discussed in seminars. In the field studies students work in groups of five and analyze various policy aspects of one organization (of their own choosing) throughout the year. This course and other project-type units in the second year provide a workshop in which students can improve their skills in field research, problem formulation and solution and group decision-making.

Electives

Students may choose either (a) eight electives or (b) six electives and a Research Paper. The electives open to a student will depend on his area of concentration.

Concentrations

Upon entering second year, a student must select an area of concentration. The concentrations available and their requirements are:

ACCOUNTING AND FINANCE

Required:

271-616 Analysis for Decision
or
271-618 Topics in Financial Reporting I
274-650 Finance II
271-617 Analysis for Control
or
271-619 Topics in Financial Reporting II

Other electives to be approved by area coordinator.

BEHAVIOURAL SCIENCE AND PERSONNEL

Option I: **Organizational Behaviour**

Required:

272-521 Leadership Style and Organizational Stress
272-625 Strategies of Organizational Development
272-627 Salary Administration
272-628 Creativity and Adaptive Organizations
276-668 Consulting Seminar

Other Electives to be approved by area coordinator.

Option II: **Organizational Behaviour and Policy Concentration**

Required:
272-521 Leadership Style and Organizational Stress
272-628 Creativity and Adaptive Organization
276-668 Consulting Seminar

Optional:
272-625 Strategies of Organizational Development
272-627 Salary administration
276-665 Business in Society I
276-667 Business in Society II

Other electives to be approved by area coordinator.

FINANCE

Required:
274-641 Finance I (taken during the first year of the M.B.A. program)
274-650 Finance II

Category A:
274-645 Financial Intermediation: Theory and Analysis
274-648 Applied Corporate Finance
274-647 Advanced Seminar in Finance
274-649 International Financial Management
274-646 Investments and Portfolio Management
274-644 Canadian Financial Institutions

Category B:
271-616 Analysis for Decision
271-617 Analysis for Control
277-679 Applied Deterministic Optimization
277-680 Applied Sequential Optimization
277-678 Simulation of Management Systems
271-618 Topics in Financial Reporting I
278-686 Introduction to International Business
277-634 Regression Models in Management
273-636 Management Information Systems
279-697 Topics in Managerial Economics
278-691 Business Law I

Courses in Category A not selected under that requirement.
Others (with approval of area coordinator)

For the M.B.A. concentration in Finance, the student must take both required courses, Finance I and Finance II, three courses in Category A and one course in Category B for a total of six courses. The student is cautioned to observe prerequisite requirements for the courses he selects.

INDUSTRIAL RELATIONS

Required:
278-687 Industrial Relations
278-688 Labour Relations in the Public Sector
279-493 Labour and Industrial Relations Theory
(See B.Com. Calendar for description)

Optional:
272-625 Strategies of Organizational Development
272-628 Creativity and Adaptive Organizations

Other electives to be approved by area coordinator.

INTERNATIONAL BUSINESS

Required:
Any four of the following:

278-686 Introduction to International Business
278-683 International Business Policy
274-649 International Financial Management
275-660 International Marketing Management
492-437 Comparative Company Law and the Multinational Company (given by the Law Faculty)

Others (to be approved by area coordinator)

Students concentrating in International Business are strongly urged to also do in-depth work in another functional field (e.g. Marketing, Finance, etc.).

MANAGEMENT INFORMATION SYSTEMS

Required:
273-637 Information Systems Design
273-636 Information Systems Administration
271-616 Analysis for Decision
273-635 Advanced Topics in Systems Technology*
273-638 Advanced Topics in Systems Applications*

Any two of the following:

271-617 Analysis for Control
277-679 Applied Deterministic Optimization
277-680 Applied Sequential Optimization
405-633 Information Retrieval (given by the Graduate School of Library Science)
308-614 Systems Analysis I (given by the School of Computer Science)
308-615 Systems Analysis II (given by the School of Computer Science)

Others (to be approved by area coordinator)

MANAGEMENT SCIENCE

Required

A student may concentrate his second-year M.B.A. studies in Management Science by selecting at least four of the following elective courses:

277-675 Applied Time Series Analysis for Managerial Forecasting
277-676 Applied Multivariate Data Analysis
277-678 Simulation of Management Systems
277-679 Applied Deterministic Optimization
277-680 Applied Sequential Optimization
277-632 Sample Survey Methods and Analysis
277-633 Applied Decision Analysis
277-634 Regression Models in Management

MARKETING

Required:

Each student selecting the Marketing Concentration is required to take Marketing Management II. In addition, the student is required to elect a *minimum* of two courses from the following list of fundamental courses:

275-658 Marketing Research
275-656 Marketing Science in Marketing
275-655 Marketing Planning
275-657 Consumer Behaviour

Finally, the student must select two *additional* Marketing courses from the list above and/or the following list:

275-659 Industrial Marketing
275-660 International Marketing Management
275-654 Marketing Communications

NOTE: Marketing Management I 275-651 or equivalent (with permission) is a prerequisite to all the Marketing courses listed above.

POLICY

Option I. **Management Policy**

Required:
276-666 Cybernetics in Management
276-668 Consulting Seminar
272-628 Creativity and Adaptive Organizations
276-665 Business in Society I

Other electives to be approved by area coordinator.

Option II. **Small Business Concentration**

Required:
276-664 Managing the Small Business
278-691 Business Law I
275-655 Marketing Planning
272-628 Creativity and Adaptive Organizations
276-668 Consulting Seminar

Course descriptions for second year electives are given below and where there is a prerequisite, this is indicated.

N.B. Some elective courses may be cancelled due to insufficient enrolment.

* Introduction of course subject to approval from the Faculty of Graduate Studies and Research. Course descriptions not available at this time.

4.3 COURSE DESCRIPTIONS

271-616 ANALYSIS FOR DECISION. Concerned with the provision of data/information to management for planning and decision purposes. The emphasis is on correctly specifying this data/information, and as a result the course is at a fairly conceptual level. A range of production and investment decisions will be examined, and familiarity with calculus and linear programming will be assumed. It is desirable, but not essential, that the student should already have taken Introduction to Modelling Methods in Management. In terms of subject categories, the course is a blend of economics, accounting, finance and quantitative methods. (It is really the first half of a full course on Analysis for Decision and Control, the second half of which is offered in the second semester. Either course may be taken on its own, however.)

271-617 ANALYSIS FOR CONTROL. Concerned with problems of control in large business organizations, approached at a fairly conceptual level. "Control" is interpreted broadly, to encompass external and internal control, and within the latter financial control, control of time-cost-resources, control of data/information flows. Other topics covered include problems of centralization vs. decentralization (including the transfer price problem), the measurement of performance, and a thorough critique of accounting controls such as budgetary control and standard costing. The course includes inputs from accounting, economics, organization theory and general control theory.

271-618 TOPICS IN FINANCIAL REPORTING I. This course will be an in-depth analysis of corporate financial reporting principles and practices, with an emphasis on developing the abilities of the student to discriminate between the form and substance of corporate financial reports. Particular attention will be paid to those areas which have caused concern in professional accounting and financial analysts circles. Topics covered will include: theoretically optimal properties of financial reports; conventional financial statement preparation; problems of income recognition; extraordinary events; earnings per share analysis; tax liability analysis; asset valuation and depreciation analysis; intangible assets, inventories, mergers and acquisition analysis, lease accounting; pensions and long-term liabilities and foreign exchange transactions. Course materials will include material from accounting principles, hypothetical case analysis, and the analysis of actual financial reports of Canadian and American corporations.

271-619 TOPICS IN FINANCIAL REPORTING II. (Prerequisite: Topics in Financial Reporting I 271-618 or equivalent). This course considers the financial reporting aspects of accounting in an analytical context. Both general and specific problems of financial reporting are considered from the points of view of management, stockholders, the securities markets, governments, and other interested bodies. It will emphasize those theories concerning the nature and importance of financial reporting which have, to some extent, been empirically verified, such as the evidence on the relationship between accounting reports and stock market prices, for example.

272-521 LEADERSHIP STYLE AND ORGANIZATIONAL STRESS. In this course the influence of personality, situational and cultural factors on strategic decision making will be examined. The role of

power and political behaviour in organizational life will be reviewed. To analyze these complex interelationships a psychodynamic model of organizational behaviour will be emphasized.

Selected topics of analysis will be managerial style; superior-subordinate relationships; organizational climate and stress; entrepreneurial behaviour patterns; power and politics in strategic decison making.

Materials will mainly consist of cases and selected readings about leaders of private and public enterprises.

272-625 STRATEGIES OF ORGANIZATIONAL DEVELOPMENT. Organizational Development is a process of planned change in an organization's culture (i.e. the learned and shared assumptions about the norms that regulate member behaviour); a long-range effort to improve the organizations problem solving and renewal processes, utilizng the applied behavioural sciences and experience based learning. Students will examine theory, strategies, and techniques of organizational diagnosis and intervention — and will interact with consultants from various Montreal and Canadian organizations as they present case-studies of their on-going organizational development projects.

272-627 SALARY ADMINSTRATION. This course is designed to expose the students to total compensation systems in business and service organizations. The emphasis is on understanding the various compensation theories and their relation to compensation policies within organizations. Behavioural effects of different types of compensation plans and how to make compensation plans more effective with the use of behavioural science knowledge will be discussed. Some of the topics that are covered in the course are: nature of financial motivation compensation theories, job design and job analysis, compensation practices, designing a compensation package, pay and organizational effectiveness.

272-628 CREATIVITY AND ADAPTIVE ORGANIZATIONS. The course will deal with what we know about creativity, the process of innovation, the management of creativity, and the implications of innovation for modern management. The accent will be on studies of actual innovations, of creative individuals and organizations, interviews with creative managers, case studies and field studies.

273-636 INFORMATION SYSTEMS ADMINISTRATION. This course is concerned with the justfication, selection, design and implementation of computer-based business information systems. Systems to service functional requirements of the organization, concepts of total information systems will be considered. The case study method will be used.

273-637 INFORMATION SYSTEMS DESIGN. The objective of the course is to introduce basic data and information concepts and their practical application in the development of information systems in the organization. Supplementary readings evaluate the evolution of structural systems analysis techniques. Specific topics include: the systems approach and systems analysis; information from data, economics of information, and methods of information systems development; data base, data structure, association and manipulation of data; systems development methodology (evaluation, justification design and implementation).

274-644 CANADIAN FINANCIAL INSTITUTIONS. (Prerequisite: Finance II — 274-650). Two interrelated subject areas are explored in this course. First, the micromanagement of the financial institution is explored using the tools of portfolio and financial intermediation theory. Second, the macro, public policy implications of the institution, their form, and legal framework are investigated.

274-645 FINANCIAL INTERMEDIATION: THEORY AND ANALYSIS. (Prerequiste: Finance I — 274-641). This course examines the demand for and supply of funds for the financial intermediaries, mainly banks and near banks. To this end, simple econometric formulations and models are reviewed and students are familiarized with the institutional aspects of "Canadiana". The role of the banking sector in the money creation process is stressed as well as international aspects of monetary policy.

274-646 INVESTMENTS AND PORTFOLIO MANAGEMENT. (Prerequisite: Finance II — 274-650). The prime objective of the course will be to provide the student with a rational framework for investment, be it personal or professional. To this end the portfolio and capital market theory of Finance II is extended and the empirical evidence supporting these and competing hypotheses is investigated for both individual securities and portfolios.

274-647 ADVANCED FINANCE SEMINAR. (Prerequisite: Finance II — 274-650). Selected topics will be discussed by Faculty members, invited guest speakers, and the students enrolled in the course. Each student is required to select a topic for study and prepare a written report for presentation.

274-648 APPLIED CORPORATE FINANCE. (Prerequisite: Finance II — 274-650). Conceptual models and techniques studied in earlier courses are extended and/or applied to decision problems faced by managers in the Corporate Finance area. Such problems include the management of working capital, capital budgeting, capital rationing, capital structure, dividend policy, the cost of capital, mergers and acquisitions, leasing, option valuation, and insurance. The course is intended to enhance the ability of students to consider Corporate Finance problems in terms of applicable theory and techniques.

274-649 INTERNATIONAL FINANCIAL MANAGEMENT. (Prerequisite: Finance I — 274-641 or permission of instructor). This course examines

operational problems of financial management in the multinational enterprise: forecasting adversities in the international financial environment; determining the firm's exposure to foreign exchange rate changes; protecting against exchange losses; transfer pricing and profit remittance policies; multinational capital budgeting; use of Eurodollar and overseas sources of capital; consolidation of financial statements; etc.

274-650 FINANCE II. (Prerequisite: Finance I — 274-641). A presentation of the modern theory of finance. A foundation is established here from which students may pursue further specialization or from which specialists in other areas may appreciate their interaction with the Finance function. The theory covers three interrelated finance functions; capital budgeting, corporate finance (including cost of capital, capital structure, and dividend policy), and portfolio theory. An analytic approach is taken where objectives are specified, constraints recognised and the resource allocation of capital on both personal and corporate levels investigated. The course is a prerequisite for Applied Corporate Finance, Investments and Portfolio Management, and Management of Financial Institutions.

275-652 MARKETING MANAGEMENT II. * (Prerequisite: Marketing Management I — 275-651). Marketing Management II is a managerially-oriented follow-up course to the M.B.A. I Marketing Management course. Upon completion of the M.B.A. I course, the student has gained an insight into the role of marketing, the problems faced by the marketing executive, and the tools, concepts and theory the marketer has available. But the student has acquired relatively little experience in actually *using* these tools and concepts. Marketing Management II is designed to fill this void. Its orientation is one of decision-making and problem solving. Its focus is specifically on the decision areas of marketing management: product and pricing decisions; communications decisions; and channel and distribution decisions. The course will emphasize the application of marketing theory, concepts and methods to the solution of "real life" marketing problems. At the same time, the methods and tools of marketing will be covered in greater depth than in the first year course. The course will be based on cases and readings. Marketing Management II is a required course for those concentrating in Marketing, and a recommended second course in Marketing for others.

*Introduction of course subject to approval from the Faculty of Graduate Studies and Research.

275-654 MARKETING COMMUNICATIONS. This course provides an integrated view of the management of the organization's marketing communication and promotional programs. It is based on the central concept that advertising, personal selling and other promotional activities have a common purpose — the communication of incentives to buy. The objective of the course is to develop analytical and decision-making skills relevant to the formulation of an effective communications strategy. Models and theories of communications are covered. Other major topics include: the establishment of goals for a communications program; determination and allocation of budgets; selection and planning of media; sales force management, allocation and compensation; measurement and control of the communications program.

275-655 MARKETING PLANNING. (Prerequisite: Marketing Management — 275-651). Marketing Planning focusses on the design and implementation of marketing plans. The emphasis is on management decision-making; the student will learn approaches and techniques for formulating marketing objectives, identifying alternate strategies, preparing the marketing plan, and implementing and controlling the plan. These techniques and approaches will be applied in the solution of marketing management cases throughout the course. A field project, involving the formulation of a marketing plan, provides a student with first-hand experience in the planning process.

275-656 MANAGEMENT SCIENCE IN MARKETING. (Prerequisite: Marketing Management — 275-651). Study the nature of market response by presenting models of market response and evaluate them in the context of understanding, describing and exploring marketing problems. Explore the particular marketing problem areas of advertising, pricing, personal selling and product planning. Relevant problems will be structured, analyzed and studied from a management science point of view. The interaction between each marketing variable will be considered. The problems of implementation of the management science approach in the real world of marketing organizations will be discussed.

275-657 CONSUMER BEHAVIOUR. This course is intended to acquaint students with a variety of research approaches focusing upon the behaviour of the consumer in the market place. It is intended to sensitize the student to human behaviour in general so that he/she may carry this understanding of basic processes over to the more specific arena of the consumer.

275-658 MARKETING RESEARCH. (Prerequisite: Marketing Management — 275-651 or permission of instructor). Training in the design, execution and interpretation of survey, experimental and other methods in marketing. Emphasis is placed upon sample design, data collection and data processing; evaluation of alternative designs, execution of problems and interpretation of data. A review of illustrative research studies is made; an actual study is designed and data are collected and interpreted.

275-659 INDUSTRIAL MARKETING. The course focuses on formulating policy and implementing decisions for marketing to industry. The concepts

of Product Life Cycle, Industrial Buyer Behaviour, New Product Planning, Product-Market Portfolios, etc., will be studied via assigned readings. Class work will be devoted to applying these concepts to on-going operational problems. The course divides approximately: one-quarter assigned readings; one-quarter written case work; one-quarter lecture discussions; and one-quarter written case work.

275-660 INTERNATIONAL MARKETING MANAGEMENT. (Prerequisite: Marketing Management I 275-651 or permission of instructor). This course examines the opportunities and problems that confront a firm that wishes to extend beyond the confines of its domestic environment and to penetrate foreign markets. Product, pricing, channel and communications policies are reviewed and modified to strike the appropriate balance between adapting completely to each foreign market, on the one hand, and profiting from an integrated approach on the other. The latter part of the course concentrates on international trade questions and the fundamentals of export marketing in the Canadian context.

276-664 MANAGING THE SMALL BUSINESS. This course will focus on the strategies and operating problems of small business enterprises. It is designed for individuals who are considering entrepreneurial careers in the environment of a smaller company. The characteristics and urgencies of problems that small companies are likely to encounter at different stages in their evolving life-cycle will be explored.

276-665 BUSINESS IN SOCIETY I. (Prerequisite: Economic Analysis of Business 279-692 and Economic Environment of the Firm 279-691). An examination of the underlying ideals and beliefs of the traditional capitalist system; management styles and corporate policies and responsibilities that are compatible with the capitalist ideal; expressed criticisms and concerns about the existing system; traditional approaches, such as anti-trust laws, to making the system more effective.

276-666 CYBERNETICS IN MANAGEMENT. Cybernetics takes the viewpoint that all systems are alike in certain fundamental characteristics. Each system involves variables, environment, purpose, control structures, energy, communication channels, etc. In this course, these basic characteristics and their relevance to the management process will be structured. From the standpoint of management, cybernetics are defined as the science of steering a dynamic and complex organization towards a desired destiny. The course will focus on the engineering aspects and logistics of the management process.

The application of cybernetics to corporate planning will be dealt with. Planning is viewed as a continuous managerial decision process. Emphasis will be placed on the process, and plan documents will be viewed as printouts of this process which tend to be outdated — by definition — at the point of issue. The students will be asked to prepare short research papers on the actual planning practices of selected organizations. The lectures and discussions will utilize many examples of actual practices concerning the application of cybernetics in designing organizations and organizing corporate planning processes.

276-667 BUSINESS IN SOCIETY II. (Prerequisite: Business in Society I — 276-667). An examination of the emerging capitalist ideology; management styles and corporate policies and responsibilities that may be encompassed within the general framework of business morality (perceived as behaviour extending beyond the law, reflecting a level of aspiration rather than a level of duty); new approaches to making business more "responsive" to the needs of society.

276-668 CONSULTING SEMINAR. This seminar is open to those full-time MBA II students who have successfully completed the fall semester of the daytime Policy course (272-630). It is anticipated that a large corporation will offer a wide choice of consulting topics; and executives will work with students, simulating a consulting relationship. Problems will tend to be those with no "right answers" but with broad implications to the corporation. Students will be expected to spend three hours per week, mainly at company headquarters, with regular written and oral reports to professors and executives. Professionalism will be stressed as part of this effort toward student-executive-faculty cooperation.

277-632 SAMPLE SURVEY METHODS AND ANALYSIS. (Prerequisite: Basic Management Statistics 277-613 or equivalent). This course deals with the design of surveys and the analysis of survey data with particular emphasis on applications in management. Topics covered include: design of sample surveys, sampling procedures including simple random, stratified, systematic and unequal probability sampling; multistage and cluster sampling; judgment sampling; ratio and regression estimation; procedures for non-response and non-sampling errors; introduction to experimental methods and experimental design.

277-633 APPLIED DECISION ANALYSIS. (Prerequisite: Basic Management Statistics 277-613 or equivalent). The course covers the canonical decision model; utility theory and preference analysis including the expected utility axions, multiattribute utility functions, dominance principles, and methods of preference assessment; role of information in decision making including classical and Bayesian decision analysis, valuation of information and methods of probability assessment; group decision making including group preference functions and topics from game theory; case applications of decision analysis to various areas of management.

277-634 REGRESSION MODELS IN MANAGEMENT. (Prerequisite: Basic Management Statistics 277-613 or equivalent). This course deals with the applications of major econometric methods to management, with particular emphasis on finance, accounting, marketing and managerial economics. Each case or study is made up of theoretical hypotheses about the relationship, its statistical measurement and a judgment on its reliability. Topics covered include: tools for measuring statistical relationships, analysis of demand and cost-output relationships, price and profit models as well as multi-equation models. The course stresses the use of computer programs as an aid in management metrics.

277-671X STATISTICS FOR BUSINESS DECISIONS. (Prerequisite: Basic Management Statistics 277-613 or equivalent). Bernoulli and Poisson processes, Bayesian inference, decision theory, regression and correlation analysis, sampling theory, experimental design and analysis of variance, non-parametric methods, index numbers, classical time series analysis and exponential smoothing. Several exercises using statistical computer programs available on the McGill system are assigned.

277-675 APPLIED TIME SERIES ANALYSIS FOR MANAGERIAL FORECASTING. (Prerequisite: Basic Management Statistics — 277-613 or equivalent). This course is devoted to applications of time series analysis to business problems. Starting with the elementary ratio-to-moving average methods, the course deals successively with the Census 2 method, with the methodology introduced recently by Box and Jenkins, with spectral analysis and with time-series regression techniques. Computational aspects and management applications of the methodology are emphasized. The students are expected to participate by preparing and presenting case studies.

277-676 APPLIED MULTIVARIATE DATA ANALYSIS. (Prerequisite: Basic Management Statistics — 277-613 or equivalent). This course is devoted to the application of multivariate analysis to problems in Behavioural Science, Marketing, Economics and Finance. Computational aspects of the methodology are emphasized and the students will be expected to prepare and present actual cases. The following topics will be discussed: multiple regression and analysis of variance, factor analysis, discriminant analysis, classification procedures, multidimensional scaling, cluster analysis.

277-678 SIMULATION OF MANAGEMENT SYSTEMS. This course is devoted to the methods and skills of building simulation models for Management Systems. It stresses the construction of useful models, the design of simulation experiments and the analysis of the results for making decisions. The students are expected to design a complete simulation of a real problem using a standard simulation language.

277-679 APPLIED DETERMINISTIC OPTIMIZATION. Topics include: Linear Programming and extensions to more general decision problems such as Quadratic and non-linear models, network analysis, and models of discrete decision making. The course stresses the solution of complex management problems using efficient optimization tools of Operations Research. The students will work on real management projects to apply the techniques acquired.

277-680 APPLIED SEQUENTIAL OPTIMIZATION. (Prerequisite: Applied Deterministic Optimization 277-679 or equivalent). This course is devoted to the application of dynamic programming to a variety of decision-making contexts, both in deterministic and probabilistic environments. Topics include dynamic inventory scheduling with uncertain demand, unbounded horizon problems, problems in replacement and maintenance, etc.

278-681 MANAGEMENT IN THE PUBLIC SECTOR I. Examination of leading issues in the management of governmental operations with some comparative analysis of other fields of administration. Specific emphasis will be placed on a comparative study of the meaning and measurement of efficiency and effectiveness in government and private enterprise.

278-682 MANAGEMENT IN THE PUBLIC SECTOR II. This course will stress decision-making in the public sector. In particular, it will look at the structures of decision-making in the government at the cabinet, departmental and regulatory agency levels. Particular stress will be placed upon a simulation project based around a current problem.

278-683 INTERNATIONAL BUSINESS POLICY. (Prerequisite: Introduction to International Business — 278-686 or permission of instructor). This course develops and applies conceptual approaches to general management policy and strategy formulation in multinational enterprises. Attention is focussed first on the strategic planning process. The various aspects of management policy studied include marketing strategy, location strategy, technology transfer, labour policy, ownership strategy and planning for international divestment. Emphasis is placed also on developing the student's practical skill using case studies and negotiating international business arrangements.

278-686 INTRODUCTION TO INTERNATIONAL BUSINESS. An introduction to cultural, economic and political aspects of domestic, international and foreign environments and their effects on the international operations of business firms. The course seeks to familiarize the management student with the expanded world of the international businessman by examining the underlying concepts of international economic theory; developing a framework

for examining country environmental constraints (sociological, educational, economic, political-legal) and relating them to the operations of multinational enterprise; studying the relationship between the international firm and the nation state, with particular reference to Canadian foreign ownership policies; and discussing selected topics such as the role of multinational enterprise in economic development and planned economies.

278-687 INDUSTRIAL RELATIONS. Unions, management and the public interest; a course designed to acquaint the student with the problems of industrial relations in different employment situations; the impact of unions on employees and on management; managerial attitudes toward unions and collective bargaining in a mixed enterprise society; and evolving public policy with regard to labour relations in both the public and private sectors. A few lectures, group projects and seminar papers are used.

278-688 LABOUR RELATIONS IN THE PUBLIC SECTOR. (Prerequisite: Industrial Relations — 278-687 or by permission of instructor). This course covers labour relations in a broad area of public services, federal, provincial and municipal, as well as in the so-called quasi-public services such as hospitals, schools and government agencies and boards. Students will be encouraged to come to grips with some of the more contentious current issues in public service labour relations and to compare and analyse the alternative methods that have so far been evolved to deal with them. This course is also open to final year undergraduate students majoring in Industrial Relations. Others only by permission of the instructor.

278-691 BUSINESS LAW I. This course concerns itself with an introduction to law with special emphasis on how it affects the businessman. Some topics to be covered include the court systems and their organization; the practical aspects of procedural law; the general nature of contracts and delicts; legal requisites for the validity of contracts; special contracts — sale; lease and hire; agency; bailment; loans; other special contracts.

278-692 BUSINESS LAW II. (Prerequisite: Business Law I — 278-691). This course concerns itself with the more specific legal aspects of law as they relate to the businessman. Some topics to be covered include: the various labour laws and Workmen's Compensation; Government regulation of business, Anti-Combines, Consumers' Protection Act, etc.; the various aspects of corporate financing business organizations including sole proprietorship, partnership and company law; insurance and bankruptcy; patents and trademarks; commercial papers; tax laws such as sales and use taxes, excise taxes and some aspects of income tax.

279-697 TOPICS IN MANAGERIAL ECONOMICS. (Prerequisites: Economic Environment of the Firm 279-691 and Economic Analysis of Business 279-692). The objectives of this course are: (1) to examine and develop applications of managerial economics in the analysis of business problems, and (2) to provide experience in evaluating business opportunities. Most class sessions will be seminars, in which participants will present a paper or report, and then lead group discussion on the chosen topic. In addition, there may be some lectures and sessions devoted to planning and conducting business studies, and to investigation and discussion with visitors from industry. Seminar topics may be selected from the following list: Market and Sales Forecasting, Production Planning and Scheduling, Business Planning, Control, New Project Evaluation, New Product Development and Appraisal, Price Discrimination, Plant Location, Regulation of Public Utilities, Industry Studies (selected by participants).

280-610 INDEPENDENT RESEARCH PROJECT. This project is designed to familiarize students with the process and the problems of independent research. The student is given considerable freedom in choosing research topics. The study may be a normative one or a descriptive one. It may be based on primary data or on secondary data. In this project students get the opportunity to work on a one-to-one basis with a faculty member for the entire academic year. Members of the Montreal business community act as resource consultants when this appears desirable.

5 FEES AND EXPENSES

5.1 FEES

The University reserves the right to make changes without notice in the published scale of fees.

The tuition fees for the first year of the program are $570 plus $99.50 for Student Services and Students' Societies fees (this covers charges for the health service, athletic facilities and membership in the Postgraduate Students' Society). The tuition fees for the second year are $285, plus $64.50 for Student Services and Students' Societies fees. Tuition fees may be paid in two instalments.

Please note that students having completed courses through the Centre for Continuing Education and who are registering directly into the second year must have paid the equivalent of the first year tuition to the Centre for Continuing Education, otherwise they will be required to pay $570 plus $99.50 for Student Services and Students' Societies fees.

Students transfering from another university into the second year program at McGill must also pay the first year tuition fees of $570 plus $99.50 for Student Services and Students' Societies fees.

Details of special fees including the graduation fee of $10.00 are given in the *General Announcement* which may be obtained from the Registrar's Office, F. Cyril James Building.

5.2 STUDENT EXPENSES

Single Student in University Residence Minimum Estimate for 1st Year Students

Tuition	$ 570.00
Student Services	70.00
Students' Societies	29.50
Housing and Food — 9 months (weekday meals only)	1,638.00
Books and Supplies	320.00
Health Insurance (foreign students only)	85.00
Other Expenses (Average)	700.00
	$3,412.50

Married Student with Wife Working, No Children — Minimum Estimate for 1st Year Students

Tuition	$ 570.00
Student Services	70.00
Students' Societies	29.50
Unfurnished McGill Apartment — 1 yr. lease	2,220.00
Food — 1 year	2,000.00
Books and Supplies	320.00
Health Insurance (foreign students only)	150.00
Other Expenses (Average)	850.00
	$6,209.50

Miscellaneous Expenses

Personal expenses vary greatly with individual requirements, and clothing, laundry, transportation, entertainment and other expenses should be very carefully estimated.

6 SCHOLARSHIPS AND FINANCIAL AID

Most of the scholarships and fellowships available through the Faculty of Management are awarded automatically on the basis of academic excellence. However, financial aid forms are completed by all applicants after their acceptance into our program, regardless of whether the financial aid is to be awarded on a merit or a need basis. Please note that students must make separate applications for awards available through the other sources as indicated in the following descriptions.

Qualified students with limited financial resources should not be deterred from applying for admittance to the M.B.A. program. Information on financial aid offered by sources outside the Faculty of Management is listed herein in the expectation that applicants will seek such aid in all cases for which they are eligible.

Foreign Students

The Faculty is normally unable to offer any financial assistance to foreign students. We regret, therefore, that we must have a written guarantee in the form of a bank letter that the student has the necessary funds to complete his studies. Scholarships/fellowships are occasionally awarded to foreign students with exceptional academic ability, but the amount of the financial aid does not cover all the expenses for two years of study. Funds are available, however, through the Canada Council and the Commonwealth and Colombo Scholarship Plans as described under "International and Private Awards" herein, and should be applied for through your own government.

Financial Assistance Obtained Through the Faculty of Management

Applicants are considered automatically for the following awards. Scholarship winners will be informed prior to registration.

McGILL ASSOCIATES GRADUATE FELLOWSHIPS IN MANAGEMENT — These fellowships were established by the McGill Associates, a group of Montreal business and professional men interested in the University, to ensure that the graduate program of the Faculty of Management continues to attract students of a high academic and professional calibre. A number of fellowships are available, each with an annual value of up to $3,600, for students at the Master's level. This amount may be increased in the case of students proceeding to a doctoral degree.

H.E. HERSCHORN GRADUATE SCHOLARSHIP. — Established in 1965, covering the amount of the current tuition fees and tenable by a student entering either the first or the second year of the M.B.A. program.

SEAGRAM BUSINESS FELLOWSHIPS OF THE SAMUEL BRONFMAN FOUNDATION. *(Type B Awards).* — Four type B fellowships of $1,600 are given annually by this foundation to students in their final year of a Master's program or in any year of a Doctoral program. Eligibility is limited to Canadian citizens. Applications are submitted on behalf of candidates by the Dean of the Faculty of Management by April 12.

Applications must be made as indicated for the following awards:

FACULTY OF MANAGEMENT ASSISTANTSHIPS. — Assistantships up to a maximum of $600 are offered to a limited number of students. Student assistants are expected to carry out specific tasks

during the year. (Most of these assistantships are awarded to second year students.)

FACULTY OF MANAGEMENT STUDENT LOAN FUND. — A student loan fund has been established and is administered by the Student Aid Office. For further information, apply to the Student Aid Office, McGill University, 3465 Peel Street, Montreal, Quebec.

RODGIE McLAGAN FELLOWSHIPS IN MANAGEMENT. — Two fellowships of $1,500 each have been established by Canada Steamship Lines for graduate study in management. Financial aid forms must be completed and returned to the Admissions Officer by July 1st.

Fellowships and Awards available from various sources

a) The following is a list of awards available through McGill which have been awarded to some of our students in the past.

CENTRAL MORTGAGE AND HOUSING CORPORATION GRADUATE FELLOWSHIPS (CMHC). Fellowship stipends are $3,000 plus tuition fees for students proceeding to a master's degree and $4,000 plus tuition fees for post-master's candidates proceeding to a doctoral degree. (Tenable in a broad range of fields involved in understanding and dealing with urban regional environment.) Candidates must be recommended by the University and must be Canadian citizens or landed immigrants in Canada. Application forms and information are available from: Administrator, Advisory Group, Central Mortgage and Housing Corporation, Ottawa, Ontario. Completed application forms must be received by Central Mortgage and Housing Corporation no later than March 1.

GOVERNMENT OF QUEBEC GRADUATE SCHOLARSHIPS. Competitions are open to Canadian citizens residing in Quebec for at least one year and to landed immigrants with 18 months' residence in Quebec at the time of their application for a grant.

i) **Type B1 — Graduate Scholarships.** Valued up to $4,000 for married students and up to $3,000 for single students. Open to all fields of study but applicants must hold a Bachelor's degree or first university degree. Apply to the Fellowships Office, Faculty of Graduate Studies and Research, McGill University, P.O. Box 6070, Montreal, Quebec H3C 3G1. Completed application forms must be received by the Fellowships Office by January 15th at the latest.

ii) **Type A3 — M.B.A. Scholarships (Jeunes Administrateurs).** — 75 scholarships available, valued at up to $6,000 for single students and up to $8,000 for married students, tenable for a period of 12 months. Applicants must hold a first university degree with two years of full-time experience in Quebec in some executive capacity in a small or medium-sized business. Apply to the Fellowship Office, Faculty of Graduate Studies and Research, Dawson Hall, McGill University, P.O. Box 6070, Montreal, Quebec H3C 3G1, Completed application forms must be returned to the Fellowships Office by January 15th at the latest.

N.B. Students unable to comply with the above deadline may submit the completed application directly to the Quebec Government by January 31st at the very latest.

McCONNELL MEMORIAL FELLOWSHIPS. These fellowships were established by the J. W. McConnell Foundation to support postgraduate studies and research at McGill University, and so to strengthen, in quality and numbers, the academic staffs of Canadian universities and schools. These fellowships may be held by students registering in any postgraduate research program at McGill, but only those whose homes are in Canada, or who intend to make their homes in Canada, are eligible to apply. The fellowships are intended to cover full fees, living expenses, the cost of books and such travelling as a Fellow's studies may require. The normal value of a first-year award is $3,500 per annum. The initial award is normally for a period of two years, but the fellowships are intended to carry a student through to a doctoral degree, and may be held for a total of five years. Fellows will be expected to spend the full calendar year (with the exception of a month's summer holiday) on their studies, and may not accept any remunerative appointment during the tenure of the fellowship without permission. Application forms may be obtained from the office of the Dean of the Faculty of Graduate Studies and Research and completed forms must be returned to that office before February 1.

MAX BINZ BURSARIES FOR FOREIGN STUDENTS. — Established by the estate of the late Max Binz. These Bursaries are valued at $1,000 per annum and are renewable, but are not tenable concurrently with a major scholarship or fellowship and are for summer research only. The Binz Bursaries are intended to help defray the expenses of graduate students coming to McGill from overseas countries (including South and Central America and Mexico). Foreign nationals who are Canadian landed immigrants (and therefore eligible for several categories of Canadian financial assistance) are not eligible for the Bursaries. Apply to Graduate Faculty Fellowships Office, Dawson Hall, McGill University, P.O. Box 6070, Montreal, Quebec, Canada H3C 3G1. Completed applications must be received by the Faculty Office no later than April 1.

SEAGRAM BUSINESS FELLOWSHIPS OF THE SAMUEL BRONFMAN FOUNDATION. (Type A awards). — Eight Type A awards of $1,000 are given annually by this foundation to first or qualifying year students enrolled in a Master's degree program. Eligibility is limited to Canadian citizens. Applicants for first year fellowships may

apply directly to: Professor J. P. Sallenave, Awards Chairman, Canadian Association of Administrative Sciences, Faculty of Administration, Sherbrooke University, Sherbrooke, Quebec. Completed application must be received before March 15th.

TRANSPORTATION DEVELOPMENT AGENCY FELLOWSHIPS. — Fellowships for the 1976-77 academic year are offered by the Transportation Development Agency for full-time graduate study in any discipline related to transportation, and leading to an advanced degree for which there is a thesis requirement.

Eligibility: Canadian citizens or landed immigrants in Canada. *Value:* $4,650 for a twelve month period. In addition, the Fellow's tuition fees are paid to the University. *Tenure:* Awards are tenable at any Canadian university; but, in special circumstances, may be approved for tenure outside Canada. *Applications:* Forms may be obtained from the Faculty of Graduate Studies of individual universities or directly from the Transportation Development Agency, 2085 Union Ave., Montreal, Quebec, H3A 2C3 *Deadlines:* Completed applications must be transmitted to TDA through the university and postmarked before midnight January 25th. Announcement of the awards will be made late in March.

b) The following awards are also available through McGill but are so competitive that they have not been awarded to our students in several years.

BELL CANADA FELLOWSHIP PROGRAM — Up to a total of eight graduate fellowships in the amount of $3,500 to Fellow and $1,500 to University (Fellow's tuition fees will be paid out of the $1,500) will be given annually; four of which will be new awards. Candidates must be Canadian citizens or must have held landed immigrant status for one year prior to submitting an application. Applicants must be graduates of a university or college with standards accepted by the Association of Universities and Colleges of Canada. The field of study is unrestricted, but preference will be given to subject areas relevant to the scientific, political, social or economic needs of Canada. On completion of the fellowship, duplicate copies of a thesis or reasonably detailed account of the work done, should be sent to the Director of Awards, A.U.C.C., who in turn will forward one copy to Bell Canada. Apply before March 1 to Director of Awards, A.U.C.C., 151 Slater Street, Ottawa, Ontario K1P 5N1.

GULF OIL CANADA LTD. GRADUATE FELLOWSHIPS. — Nine fellowships of $3,500 each, plus $1,000 for research expenses, open to residents of Canada who are graduates of institutions which are members of the Association of Universities and Colleges of Canada, and are tenable at any such university. Candidates must be Canadian citizens or must have held landed immigrant status for one year prior to submitting application. Unrestricted as to field of study. Apply to the Director of Awards, Association of Universities and Colleges of Canada, 151 Slater Street, Ottawa, Ontario K1P 5N1. Completed applications must reach the Director before March 1.

ISABELLA C. McLENNAN FELLOWSHIP. — $750. Awarded by the Graduate Faculty Scholarships Committee to a woman student in the Faculty of Graduate Studies and Research on the basis of academic merit and financial need. Apply to the Fellowships Office of the Graduate Faculty, Dawson Hall, before February 1.

SOCIETY OF INDUSTRIAL ACCOUNTANTS OF CANADA BUSINESS FELLOWSHIPS. — Five fellowships of $1,200 each are available annually to students enrolled in a graduate business program at Canadian universities. Awards are to be granted to students whose program indicates an interest in Management Accounting and Accounting Research. Apply before April 1 to: Administrative Secretary, Fellowships Selection Committee, Society of Industrial Accountants of Canada, P.O. Box 176, 154 Main St. East, Hamilton, Ontario.

SOLVAY FELLOWSHIP. — Value $3,500 plus tuition fees, offered for the first year of study in the Faculty of Graduate Studies and Research. Tenable in any Department of the Faculty, and open to men and women equally. The holder must have graduated in any undergraduate Faculty of McGill in the session prior to that for which the award is given, and must obtain permission to proceed to graduate study. No teaching duties are required of the holder, who may not hold any other fellowship or bursary, nor receive a salary for teaching or other duties, during his tenure. Apply to the Fellowships Office of the Graduate Faculty before February 1.

Note: For further information contact the Fellowship Office at McGill University, 3rd floor, Dawson Hall, McGill University, Montreal, Quebec, for the booklet entitled *Postgraduate Awards, Fellowships and Bursaries.*

Provincial Bursaries and Loans

In all cases, a basic qualification is that the applicant must be a Canadian citizen or a landed immigrant with one year's residence and domicile in the province to which he applies.

In all provinces, except Quebec and Ontario, the provincial authority listed below administers the Canada Student Loan Plan (Federal) as well as their own programs. The addresses are as follows:

Quebec: Apply after May 1, at the Student Aid Office, 3465 Peel St., McGill University, Montreal, Quebec, H3A 1W7.

New Brunswick: Deputy Minister, Department of Youth and Welfare, Fredericton, New Brunswick.

Northwest Territories: c/o Education Division, Department of Northern Affairs and Resources, 150 Kent St., Ottawa, Ontario.

Ontario: Ministry of Colleges and Universities, Apply after May 1 to the Students Awards Branch, Mowat Block, Queen's Park, Toronto, Ontario M7A 2B4.

Yukon Territory: The Students Financial Assistance Awards Committee, c/o Superintendent of Schools, Box 2703, Whitehorse, Yukon Territory.

For all other provinces write to the provincial Department of Education.

International and Private Awards

CANADA COUNCIL — The Canada Council offers fellowships and grants in the social sciences and humanities at the master's and doctoral level. These categories extend to undertakings of an interdisciplinary nature, but not to those closely identified with the physical and biological sciences, or with professional training.

Informative leaflets and application forms are obtainable from departmental offices in the social sciences, humanities and related disciplines, from the Fellowships Office of the Graduate Faculty, or from: The Canada Council, P.O. Box 1047, Ottawa, Ontario. K1P 5V8.

COMMONWEALTH SCHOLARSHIP AND FELLOWSHIP PLAN. — Provides opportunities for Commonwealth students to pursue advanced courses in other Commonwealth countries. Candidates must have graduated from a recognized university or hold equivalent qualifications; age limit normally 35. Successful candidates must plan to return to their own country upon completion of the study for which the award was intended. Graduate awards are usually made for two academic years and the intervening summer. They include tuition, travel expenses, maintenance allowance and a grant for incidental expenses. Closing date for receipt of completed applications varies with country of tenure, but normally October 31 (approximately 1 year prior to date of tenure) for Northern Hemisphere countries; for Southern Hemisphere countries, December 31 (approximately 1 1/2 years prior to date of tenure). Full information and application forms may be obtained from the Association of Universities and Colleges of Canada, 151 Slater St., Ottawa, Ontario. K1P 5N1.

CONSOLIDATED BATHURST LTD. GRADUATE FELLOWSHIP. — One postgraduate fellowship of $3,500 per year available to students working towards a post-graduate degree in a university recognized by the Association of Universities and Colleges of Canada and who have been recommended by the faculty of their choice. Though preference will be given to candidates registered in a doctoral program, candidates working towards a Master's degree will be considered. Open to any permanent employee in Canada, being for this purpose an employee with two or more years of service. Open also to any son, daughter or legal ward of a permanent, pensioned or deceased employee in Canada. Candidates must have completed undergraduate studies in a university or college whose curriculum is recognized by the Association of Universities and Colleges of Canada and must have obtained satisfactory results during their undergraduate studies. The decision of the committee will be based upon the student's academic transcripts, a confidential report from the university, reference letters and results of any achievement or aptitude tests taken. A fellowship holder may not hold concurrently other fellowships or awards totalling in excess of $1,500. Apply to: Director of Awards, Association of Universities and Colleges of Canada, 151 Slater Street, Ottawa, Ontario. K1P 5N1. Completed applications must be submitted in quadruplicate no later than May 1.

DEVELOPING COUNTRIES' PROGRAMS. — Students from developing areas should apply to their own Departments of Education to see whether their governments will recommend them for Colombo Plan Scholarships, Special Commonwealth Africa Aid Programs, etc.

FRANCE-QUEBEC SCHOLARSHIPS. — Information and application forms may be obtained from the Fellowships Office, Faculty of Graduate Studies and Research.

INSTITUTE OF MANAGEMENT CONSULTANTS OF QUEBEC THESIS AWARD. — A research paper prize, offered by the Institute of Management Consultants of Quebec, in the amount of $500 will be awarded to the student whose paper best meets the following criteria: i) it must deal with a management theme; ii) be written in English or in French, with no limitations as to length; iii) contribute to the advancement of the art and science of management and iv) be available for publication by the IMCQ in any professional trade magazine.

Each university is to forward its most promising papers. The winner will be announced in June.

LEVER BROTHERS LTD. BILINGUAL EXCHANGE FELLOWSHIP IN BUSINESS ADMINISTRATION. — Up to two fellowships of $7,000 plus summer employment will be awarded annually: one to a French-language candidate who will attend an English-language institution and one to an English-language candidate who will attend a French-language institution. Candidates must be Canadian citizens, under 30 years of age, who have clearly demonstrated a proficiency in the language of the institution they wish to attend. Summer employment for scholarship winners is guaranteed by Lever Bros. Ltd., and will be of a nature that will prove interesting and challenging. Apply to: Director of Awards, Association of Universities and Colleges of Canada, 151 Slater Street, Ottawa, Ontario. K1P 5N1. Completed applications in quadruplicate must be received no later than March 1.

UNITED STATES AWARDS, LOANS AND GRANTS. — For information on the above, contact your local bank branch.

ASSOCIATION OF UNIVERSITIES AND COLLEGES OF CANADA. — The Awards Service of the Association of Universities and Colleges of Canada does not itself offer any awards but it does administer several national and international programs on behalf of Canadian and foreign donors, both private and governmental. Inquiries from students regarding financial aid can be addressed directly to the Association at 151 Slater Street, Ottawa, Ontario. K1P 5N1.

There are several other programs which enable foreign students to come to Canada to study, sponsored by the Canadian International Development Agency, under the Department of External Affairs. These include the Colombo Plan, Economic Assistance to French-speaking West Africa, Special Commonwealth Africa Assistance, Caribbean Assistance Program. Interested students can apply through the Ministry of Education or through the appropriate government department in their own country.

FOUNDATIONS AND PRIVATE AGENCIES. Thousands of professional associations, foundations and companies offer financial support for the graduate student. Details about these can be found in the following publications which are available in large public libraries, university reference libraries and consulate or embassy offices.

AWARDS FOR GRADUATE STUDY AND RESEARCH: Perhaps the most useful to Canadian students, this publication lists several thousand awards available to Canadians and to those studying in Canada. Prepared by the Bureau of Statistics, it is available from Information Canada (Catalog no. 81-541).

STUDY ABROAD: This UNESCO publication lists awards tenable in Canada, as well as in other countries.

FELLOWSHIPS AND SCHOLARSHIPS OFFERED BY PRIVATE DONORS AND FOREIGN GOVERNMENTS FOR CANADIAN STUDENTS: This publication is available from the Association of the Universities and Colleges of Canada, 151 Slater Street, Ottawa, Ontario, K1P 5N1.

ANNUAL REGISTER OF GRANT SUPPORT: List of major awards distributed by American agencies.

GRANTS REGISTER: List of postgraduate awards in the English-speaking world.

Note: Further information on awards through governmental sources is listed in "Awards for Graduate Study and Research". (Catalog no. 81-541). This book is published by Statistics Canada, and is available from Information Canada.

7 RESEARCH

The vitality of a university faculty is reflected in the quality and quantity of its research — the pursuit of new and relevant forms of knowledge. In the McGill Faculty of Management, research serves an important function in the activity of both faculty and students. Research adds to our knowledge of management, and it instills in the student the desire and ability to learn systematically about the managerial environment in which he will spend his working life.

Management research is challenging and stimulating. It tends to be interdisciplinary, providing an opportunity for people with different backgrounds to work together; it embraces underlying disciplines such as psychology, mathematics, and economics; and as in all of the social sciences, it involves complex problems of conceptualization and measurement.

The following are examples of on-going research projects at the McGill Faculty of Management.

Typical Faculty Projects

1. The problems of financial reporting
2. Length of-stay distributions of hospitalized psychiatric patients
3. The effects of automation on employment
4. The use of computer terminals in management education
5. Analysis of the strategy-making process in organizations
6. The study of optimal organizational designs

Typical M.B.A. Research Papers

1. Capital budgeting and corporate planning
2. A university administrator's financial decision game
3. Foreign investment in Quebec
4. Simulation of a supermarket
5. A programmed view of managerial work
6. Legal aspects of marketing in Canada

8 AFFILIATED OPERATIONS

8.1 THE MANAGEMENT INSTITUTE

The Management Institute provides a variety of services on behalf of the University to managers in business, government and non-profit institutions. Within the management development program of the Institute, over twenty daytime seminars and sixteen evening courses are offered each year. These seminars and courses, which cover a wide range of functional areas, are specifically designed to help

middle and senior managers keep abreast of current developments in analytical and decision making techniques, and to provide a better appreciation of the integrative problems of general management.

Lecturers and seminar leaders, recognized authorities in their fields, are drawn from the Faculty of Management at McGill, from other universities in North America, and also from the community of practising managers in Montreal. All courses and seminars are held on university premises. They are restricted as to number of participants in order to ensure full discussion and individual attention.

Other activities of the Management Institute include The Presidents' Seminar, Operation Catalyst (which brings together senior people in government and business to discuss issues affecting the progress of the Canadian economy), and the McGill Conference on Industry and Government.

The Institute is under the direction of Professor R.N. Morrison.

8.2 THE FINANCIAL RESEARCH INSTITUTE

McGill's graduate students have access through the Financial Research Institute to one of the largest financial, price and economics data banks in the world. The Institute began as a joint university-business community organization and was established through the initiative of the then Graduate School of Business at McGill.

The purpose of the Institute is to foster knowledge and understanding of all quantitive aspects of financial and economic analysis related to the selection of securities and the management of financial portfolios. The Institute now serves members or clients in Winnipeg, Toronto, Ottawa, Montreal and other cities.

Because of the continued close ties maintained between the Institute and the Faculty, staff and students are able to use these resources for research in economics and finance free of charge.

9 STUDENTS' ACTIVITIES AND STUDENT SERVICES

9.1 STUDENTS' ACTIVITIES

The many student-run clubs, groups, societies, and other activities at McGill run the gamut from conferences on provincial and international affairs, to skydiving, chess competitions, films and theatre, debates, and a winter carnival.

All students registered in the University are members of the Students' Society. Headquarters are in the University Centre, a modern four-storey building, with cafeterias, a ballroom, meeting rooms and offices, lounges, and an experimental theatre.

The Post-graduate Students' Society operates semi-autonomously within the Students' Society. The P.G.S.S. has its own centre, Thomson House, with offices and meeting rooms, and, for relaxation an eating area and a bar, as well as other rooms for reading, games, music, recreation and dancing. During the academic year, the Society publishes the McGill Martlet, a tabloid newspaper, and arranges a number of cultural, recreational, political, and educational events. Its intramural athletic program operates throughout the academic year and the summer session. It issues a handbook at registration containing information designed to solve many of your potential problems before they occur. Copies can be had in advance by writing to the P.G.S.S. at Thomson House, 3650 McTavish Street, Montreal, Quebec H2C 3G1.

The McGill Dames Society is a social outlet for wives of graduate students. It has accumulated some very useful information of help to newcomers in finding accommodation and employment.

9.2 STUDENT SERVICES

9.2.1 Athletic Facilities

The university offers many facilities for athletic participation and instruction to provide you with the opportunity to balance the rigorous study programs you will be undertaking.

The Sir Arthur Currie Memorial Gymnasium has basketball and squash courts, swimming pool, badminton courts, volleyball courts, and facilities for floor hockey, gymnastics, wrestling, fencing, weight-training, track and judo. The McGill Winter Stadium's artificial ice rink is in demand for hockey games, and competitive as well as recreational skating. In Macdonald Park on the side of Mount Royal, the Percival Molson Stadium with a full-sized football field encircled by a 440-yard cinder track, seats 20,000 people. Beside it, also in the Park, are another full-sized football field, a multi-purpose recreational area, and four hard-surface tennis courts.

The University fields teams in a number of intercollegiate sports.

Your Student Identity Card entitles you to use all facilities and admits you to most home competitions free of charge.

9.2.2 University Bookstore

The University has its own bookstore on the main floor of the Samuel Bronfman Building. It carries a complete stock of textbooks for all courses, and other materials and supplies. Individual items not ordinarily carried can be specially ordered at your request. The bookstore is open until 8 p.m. Monday to Thursday during registration time and from 9 a.m. until 4 p.m. Monday through Friday during the academic year.

9.2.3 Health Service

A compulsory medical examination and X-ray are standard for all new McGill students.

The Student Health Service provides these and, in addition, is available day and night to provide treatment for any minor illnesses, accidents, and emergencies, and professional help for those in emotional or psychological difficulties. If you become seriously ill, the Health Service will refer you to the public service of one of Montreal's excellent hospitals or you may go to a doctor of your choice.

(Note to non-Canadian students: The Province of Quebec does not provide insurance for medical purposes to immigrant students and the University has instituted for your protection a compulsory health insurance plan at a cost to you of $85.00 for single students and $150 for married students, payable at registration.)

9.2.4 Housing and Food

McGill is in the heart of the city of Montreal and there are a variety of private rooming houses and apartment buildings which may be considered on arrival. However, if students are interested in University accommodation the following information may be helpful.

McGill has four co-educational residences in Macdonald Park on the side of Mount Royal overlooking the city. They are named Douglas, Gardner, Molson and McConnell Halls, after University benefactors. Accommodation in Douglas Hall takes the from of self-contained suites of three study-bedrooms and one shared sitting room. Douglas Hall has its own dining room, library common room, and recreation rooms. McConnell, Molson, and Gardner Halls house students in single rooms. The four halls together accommodate 816 students. Each hall has its own common room, library, and recreation room. The three buildings surround a central catering and dining facility, Bishop Mountain Hall. Students wishing to live in residence should apply to the Secretary, Co-educational Residences, 3935 University Street when making their application for admission. Upon acceptance into the program, the Residence Secretary should be contacted to see if a decision has been made regarding application for accommodation. Applications should be submitted prior to May 1.

Married students may request accommodation in one of the apartment buildings, especially acquired by the University for married students. The Real Estate Manager, P.O. Box 6070, Montreal Que., H3C 3G1, arranges these tenancies.

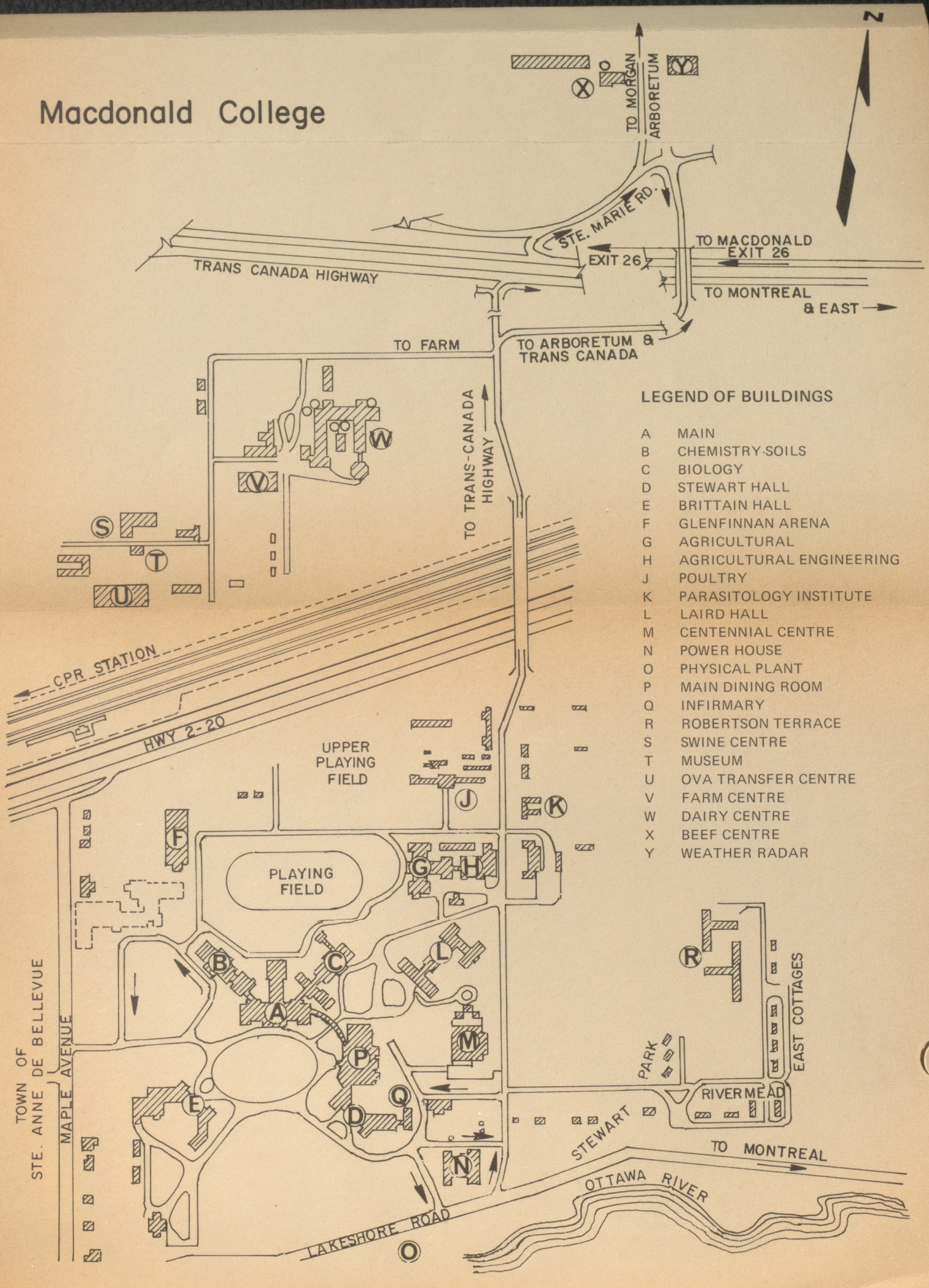
9.2.5 Placement

The Canada Manpower Centre has one of its offices on the McGill campus and assists the student in seeking permanent employment upon graduation and thereafter throughout his career. The Centre is in contact with organizations from all over Canada and the United States and arranges scheduled interviews with interested companies on campus as well as on company premises. Its activities result in a continuing flow of excellent job opportunities being brought to your attention.

As an additional service, it will help you in finding summer employment or part-time work during the session.

Macdonald Campus Map

Macdonald College



LEGEND OF BUILDINGS

A	MAIN
B	CHEMISTRY-SOILS
C	BIOLOGY
D	STEWART HALL
E	BRITTAIN HALL
F	GLENFINNAN ARENA
G	AGRICULTURAL
H	AGRICULTURAL ENGINEERING
J	POULTRY
K	PARASITOLOGY INSTITUTE
L	LAIRD HALL
M	CENTENNIAL CENTRE
N	POWER HOUSE
O	PHYSICAL PLANT
P	MAIN DINING ROOM
Q	INFIRMARY
R	ROBERTSON TERRACE
S	SWINE CENTRE
T	MUSEUM
U	OVA TRANSFER CENTRE
V	FARM CENTRE
W	DAIRY CENTRE
X	BEEF CENTRE
Y	WEATHER RADAR

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Faculty of

LAW

1976/77

McGill University
Montreal

The University reserves the right to make changes without prior notice to the information contained in this publication, including the alteration of various fees schedules and the revision or cancellation of particular courses.

Students intending to seek membership in a professional corporation in Quebec are reminded that after July 1, 1976 they will be required to show that they possess a working knowledge of the French language, in conformity with the requirements of the Professional Code (Bill 250) and the Official Language Act (Bill 22).

Faculty of
LAW

1976 — 77

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2 GENERAL INFORMATION

2.1 THE FACULTY OF LAW

The Faculty of Law of McGill University is Canada's oldest Law Faculty, and the only English-speaking law faculty in Canada teaching the civil law system. Until 1968, the Faculty's undergraduate program consisted of a three-year program of studies leading to the degree of Bachelor of Civil Law. This degree, while providing a liberal education in legal principles and theory, prepared candidates for admission to only the Quebec legal professions, as advocate or notary.

In 1968, the Faculty inaugurated the National Program. This Program is an integrated program of studies in Canadian Law in which students pursuing either a civil law or common law degree share a wide range of "Canadian" law courses in areas such as Constitutional Law, Public International Law, Administrative Law, Commercial Law, Criminal Law, and Labour Law. All civil law students take at least one basic common law course, such as Contracts, Torts or Property; all common law students take a number of basic civil law courses. Thus each student receives a basic training in the legal system in which he is earning his degree together with a serious introduction to the other. Thus a student may still obtain only a B.C.L. degree; alternatively, he may study for only the LL.B. (common law) degree. This latter program prepares candidates for the Bars of the Common Law Provinces, nearly all of which recognize the McGill LL.B. degree. But a further year of study after the obtaining of either degree leads to the granting of the second degree (B.C.L. & LL.B., LL.B. & B.C.L.). More and more students are now taking advantage of the opportunity to obtain this basic training in both systems.

It is to be noted that the LL.B. degree is conceived essentially as part of a four year National Program leading to the granting of both LL.B. (common law) and B.C.L. (civil law) degrees. While an LL.B. student may receive his LL.B. degree after three years of study, the Faculty expects that generally LL.B. students will proceed to the National Program. The requirements for the LL.B. degree, with their substantial civil law component and the reduced opportunities for undertaking elective courses during the first three years of study, have been structured so as to reflect this aim.

Common law students are required to take as part of their LL.B. degree Obligations I, Civil Property I and II, and any one of Successions, Special Contracts I, Special Contracts II, Family Law II or a Comparative Law course as offered from time to time and described as such.

The introduction of the National Program at McGill was made possible by reason of our unique position as Canada's English-speaking civil law school, and the fact that so much of the subject matter in a common law or civil law curriculum is common to both systems. The Faculty believes that its National Program creates an important link between Quebec and the rest of Canada. We are now training truly "national" lawyers, for which there is a real need in this country. Our double-degree graduates are experiencing the value of their dual training and the greater role they feel enabled to play as Quebecers and Canadians. These graduates are finding their way into federal government jobs in Ottawa; and, in both Quebec and Ontario practice, they are called upon to relate the law and practices of the two provinces.

For those intending to practice only in Quebec, the National Program is of no less value. Few Quebec practitioners deal only with the private law of Quebec; much law in this province is common to all provinces, and even Quebec private law is touched at many points, especially in commercial practice, by common law doctrines. Moreover, many clients have interests that transcend this Province. Consequently, an understanding of the common law is an asset to the Quebec practitioner.

2.2 DEGREES

B.C.L. and LL.B.

The degrees granted in the Faculty are those of Bachelor of Civil Law (B.C.L.) and Bachelor of Laws (LL.B.).

HIGHER DEGREES

The higher degrees in law are the M.C.L. (Master of Civil Law), the LL.M. (Master of Laws), and the D.C.L. (Doctor of Civil Law). Information concerning these degrees and the Graduate programs relating to them is summarized under the heading "General Regulations Concerning Higher Degrees in Law", (section 6.1.)

2.3 ADMISSION

GENERAL REGULATIONS

Application forms, which can be obtained by writing to the Faculty, must be completed and submitted by February 1st, and be accompanied by an application fee of $15 by certified cheque or money order made payable to McGill University. Although the deadline is February 1st, the Faculty may consider applications received as late as March 1st, although preference will be given to those meeting the deadline. Applications for admission should be sent to the Admissions Officer, Faculty of Law, McGill University, 3644 Peel Street, Montreal H3A 1W9. Students already registered at McGill University at the time of application for admission to the Faculty of Law will not be charged the $15 application fee. Late applications will only be considered under exceptional circumstances. Applicants should forward their transcripts, including those for their final year, as soon as possible. Candidates for admission may be required to be interviewed by the Chairman of the Admissions Committee or another member of the Faculty. In all cases admission is at the discretion of the Faculty.

The courses given in every case anticipate at least two hours of directed study for every hour of lecture. In addition, each candidate is obliged to write the essays, to attend the seminars, to participate in the Moot Court and Group Tutorial programs, and to fulfil whatever other requirements may be set by the Faculty. Candidates are expected to devote their whole time to their legal studies and are prohibited from taking other academic studies during the academic session without prior approval of the Dean.

No student is allowed to be enrolled concurrently in the Law School program and a professional training program of any Bar, which program consists of a course of lectures and/or period of articling. Where a student is found to be in breach of this rule, the Dean may require him to withdraw from the School.

Students entering the Law Faculty are expected to have a basic knowledge of Canadian Government as preparation for the study of public law. Those who have not taken a basic course on Canadian Government are strongly advised to read R. MacGregor Dawson, *The Government of Canada*, and James S. R. Mallory, *The Structure of Canadian Government*.

ADVANCED STANDING

Applicants for advanced standing must submit, in addition to the Faculty of Law application form and official undergraduate transcripts, official transcripts of their standing in another Law Faculty. In all cases attention is drawn to Section 3.4, Regulation 17, para. 3 of the Faculty of Law Announcement.

LANGUAGE REQUIREMENTS

Every candidate, whether a candidate for the degree of Bachelor of Civil Law (B.C.L.) or for the degree of Bachelor of Laws (LL.B.) is expected to have substantial fluency in both the French and English languages.

Candidates will be required to read in both languages and examinations may contain extracts in either French or English. One or more French language optional civil law courses are generally offered by the Faculty.

Examinations, term papers and essays may be written either in English or French. Participation in moot courts may also be in either language. Examination questions are set in the language in which a course is given.

One or more basic courses in the civil law in other than the first year program may be given in the French language only.

The attention of candidates intending to proceed to the Bar of Quebec or the Chamber of Notaries is drawn especially to Section 5.1 of this Announcement.

2.4 ADMISSION STANDARDS

B.C.L. and LL.B. DEGREES

One of the primary qualifications for admission to either the B.C.L. or the LL.B. program is the attainment with a second class standing of a B.A. or an equivalent degree from a university or college which is recognized by McGill University. Candidates holding a diploma of collegial studies with a high standing from a Quebec General and Vocational College (CEGEP) are also eligible for admission; however, candidates holding only a CEGEP Diploma cannot be admitted directly into the Common Law (LL.B.) program but must commence by taking the Civil Law (B.C.L.) program. In exceptional cases, candidates with lesser academic qualifications may be admitted to the Faculty if they are qualified to pursue with advantage the study of law.

Please refer to section 5 for admission to the legal profession. The attention of candidates

holding CEGEP diplomas is drawn to the fact that admission to the Bars of the other Provinces may require additional years of pre-law university education. In particular, the Law Society of Upper Canada requires an additional pre-law university year for those holding CEGEP diplomas.

The Faculty may admit a limited number of suitable persons, no matter what their academic qualifications, to attend selected courses of lectures. Such permission will only be granted to applicants who satisfy the Faculty of their capacity to undertake with advantage the study of law. They will not be allowed to proceed to a degree, but will be entitled to receive a certificate specifying the course or courses which they have successfully pursued and the grade which they have obtained.

NATIONAL PROGRAM

Admission into this program is set forth under the heading "Regulations for the National Program," Section 3.3.

2.5 REGISTRATION AND COMMENCEMENT OF CLASSES

Registration in all years of Law is on September 7, 1976. **All students must register in person.**

First year orientation will be held on September 7. Lectures in all years will begin on September 8.

Students registering late will be required to pay a Late Registration Fee and should read carefully the regulation concerning late registration in Section 2.7.

Students in upper years are required at the end of the winter term (and by a date to be announced) to complete an Early Registration Form indicating their course elections for the next academic year.

DEPOSIT

A student whose application for admission has been approved must send a deposit of $100.00 by certified cheque or money order made payable to McGill University within ten days of receiving notification of his acceptance. A student who does not wish to register, will be refunded his deposit if the Admissions Office of the Faculty has received notification of his intention not later than the date specified in the letter of acceptance.

2.6 FEES

Tuition fees are charged at the rate of $19.00 per credit. Student Services and Students' Societies fees will be separately assessed in a manner appropriate to those two functions and must be paid at the same time as the tuition fees. The maximum fee payable by a full-time student is $98. which includes $6 for the McGill Law Journal.

Each student will receive free of charge brief outlines of courses where such are available. Students will be charged $12 for course materials issued by the professor (apart from casebooks, statutes, etc. which will be sold through the McGill Bookstore.) $6 will be charged at the September registration and the remaining $6 at the second term registration.

The attention of students is drawn to the fact that they will require books and casebooks for their courses which may cost them $350.00 per year.

Further information concerning admission, entrance requirements, faculties and degrees, student services, fees and residential facilities, is published in the *General Announcement*, which may be obtained from the Registrar's Office, F. Cyril James Administration Building, P.O. Box 6070, Station A, Montreal H3C 3G1.

COMPULSORY HEALTH INSURANCE FOR NON-CANADIAN STUDENTS

All full-time foreign students (including landed immigrants during their first year at McGill) must take out a Health Insurance policy, which is available on a group basis at the cost of $85.00 per student per year for single students and $150.00 per year for married students. In general, the policy provides for payment towards hospital, surgical, medical, diagnostic and other medical expenses.

This Faculty Announcement and the Regulations contained herein govern students registered in the Faculty of Law during the 1976-77 academic year. Students are warned that they wil be subject to changes made therein as published from time to time within the Faculty before the time of their fall registration. The attention of all students prospective or otherwise is drawn to Regulation 57.

2.7 GENERAL REGULATIONS

NEW STUDENTS

Students entering the University *for the first time* are required to pay their fees either by mail or in person at the Accounting Office.

The first instalment is due within 10 days after registration, the second instalment before January 15, 1977.

RETURNING STUDENTS

Students *who have completed one or more years* and intend to register in the succeeding year must pay one half of the total sessional fee by mail or in person to the Accounting Office before August 23, 1976, otherwise they will not be permitted to register. Instructions for paying fees in advance will be mailed to non-first year students. Students who have been notified by the University of the award of a scholarship, bursary or student loan, and who require this for payment of the first instalment of

fees, must obtain from the Student Aid Officer, McGill University, a Permit to Delay Payment of Fees.

The second instalment is due by January 15, 1977. A late payment fee as stated below is charged for payment after this date.

LATE REGISTERING STUDENTS

Students registering late must pay their fees at the time of registration.

As soon as possible after the prescribed dates for the payment of fees the Chief Accountant will send to the Registrar's Office a list of the registered students who have not paid their fees. Reports of Standing, transcripts of records and diplomas will be withheld until such time as the fees are paid or a satisfactory arrangement is made with the Chief Accountant.

Late registration	$25.00
Late payment fee (after specified date):	
1st 30 days	$10.00
After 30 days	$25.00

3 CURRICULUM

The Faculty of Law operates under a credit system outlined below.

3.1 ACADEMIC CREDIT TRANSFER AGREEMENT

Students wishing to take courses for credit towards their McGill degree at any university in the province of Quebec should refer to Regulation 10 and the section entitled "Academic Credit Transfer Agreement" in the *General Announcement* for details.

3.2 REGULATIONS FOR THE B.C.L. AND LL.B. DEGREES

1. The Faculty grants a Bachelor of Civil Law (B.C.L.) degree or a Bachelor of Laws (LL.B.) degree to candidates who have successfully completed ninety-five credits in accordance with the following regulations.

2. A candidate registered for the degree of B.C.L. or LL.B. is required to take the courses prescribed in each year of the degree program for which he is registered (as hereinafter set forth in Appendices I and III). In obtaining the number of credits required for his degree, a candidate must take all the courses indicated as obligatory for the obtaining of his degree and he shall not be permitted to register for a course unless he has obtained the credits allotted to courses that are indicated as prerequisites.

   The attention of candidates proceeding to the legal profession is drawn to Appendix II and to the regulations of the relevant professional corporations regulating the legal professions in the several Canadian provinces.

3. The remaining required credits are obtained by completing whatever other options the candidate selects to the extent permitted according to Appendix III.

3.3 REGULATIONS FOR THE NATIONAL PROGRAM

4. The Faculty grants the B.C.L. degree to candidates holding an LL.B. degree, and the LL.B. degree to candidates holding a B.C.L. degree, who have successfully completed an additional thirty credits in accordance with the present regulations.

In order to be eligible to proceed to the LL.B. degree, the holder of a B.C.L. degree must have taken, and passed, during the B.C.L. program, Property IA & IIA and either Contracts I or Torts I. Likewise, the holder of an LL.B. degree desiring to proceed to the B.C.L., must have taken, and passed, during the LL.B. program, Obligations I and Property I & II. It is to be noted that candidates who entered the first year of the LL.B. program in 1972-73 or entering in subsequent years are obliged to take in their LL.B. program a larger number of basic civil law courses whether or not they intend to proceed subsequently to the B.C.L. degree. (See Appendix I Part II.)

5. A candidate who has successfully completed the first year of either the B.C.L. or LL.B. program may opt on registering for his second year to enter immediately the National Program, and on obtaining one hundred and twenty-five credits in accordance with the following regulations, shall be granted both the said degrees jointly.

   Should the candidate wish to terminate his studies after having completed ninety-five credits only, he may be granted, at the discretion of the Faculty, either the B.C.L. or the LL.B. degree, according to the courses in which he has obtained credits, provided that he has then obtained credits for all the courses listed in Appendix I. A candidate who elects to enter the National Program on successfully completing his first year should seek the advice of the Dean or his academic counsellor as to his academic program.

6. In obtaining the number of credits required for his degree or degrees under the National Program, a candidate must take and pass all the courses listed in Appendices I and IV.

7. The remaining required credits are obtained by completing whatever other options the candidate selects, subject always to the requirement that he has obtained the credits allotted to courses that are indicated as prerequisites; this latter rule also applies to obligatory courses.

3.4 GENERAL REGULATIONS

8. The word *course* as used in this announcement shall include, *inter alia*, tutorials, moots, essays, seminars and any other work for which credit is given, unless the context otherwise indicates.

9. The number of credits allotted each course equals the number of class hours per week except where otherwise indicated. The number of credits allotted to tutorials and moots is set forth in the Appendices.

10. A limited number of the credits required for either law degree or for the joint degrees under the National Program may be obtained in appropriate courses given by other faculties of McGill University or other universities, as arranged from time to time, provided the approval of the Dean or his delegate has been granted *prior* to registration for any courses giving rise to such credits. The total number of non-law credits that may be allowed under this Regulation shall not exceed six.

11. Candidates shall make their course selections for the entire academic year on or before May 31, on the forms supplied by the Faculty for this purpose. Once the delays for course selections have expired, no changes are permitted unless such become necessary as a consequence of factors such as the results of supplemental examinations and re-reads (which may render a candidate ineligible for a course), course cancellations, the addition of new courses, or time-table conflicts. A candidate may apply to drop one of the courses which he has selected, and/or select another course, provided that he does so within the first week of each term. The selection of courses and any course changes must be approved by the Dean or his delegate.

    Admission to some courses or the class sections of a course may be limited owing to heavy demand and the resources available, or because of particular teaching methods in certain fields. Some or all of the courses and seminars sponsored by the Institute of Comparative Law which are open to undergraduate students in the Faculty may be limited in their enrolment on the basis of restricted numbers or academic record.

    Candidates are reminded that they retain the ultimate responsibility for their selection of courses, and therefore must bear in mind possible consequences of their choice with respect to professional qualifications (see Admission to the Legal Profession, section 5).

12. The Faculty shall prescribe the program of candidates who do not make their course selections within the specified delays.

13. Candidates will not be allowed to alter or cancel their course registration otherwise than as prescribed above.

14. Each candidate, in his third and subsequent terms, must register for not less than twelve credits in each term (with the exception of his final term should a lesser number of credits be required for the obtaining of his degree); nevertheless, the Dean of his delegate may, under extenuating circumstances, permit a candidate not in first year to register for a lesser number of credits. A candidate may register for a maximum of 18 credits in any term (including 1st year), but in special circumstances the Dean or his delegate may permit a candidate to register for more than the prescribed maximum credits. *The attention of candidates is drawn to regulations 16 and 17.*

15. A candidate who has not succeeded in obtaining a minimum of three-quarters (rounded down to the nearest whole number) of the total credits for which he registered in any academic year will not be permitted to continue his studies in the Faculty of Law, except as hereinafter provided. A candidate who fails only one course which exceeds one quarter of the total credits for which he is registered shall not be required to withdraw from the Faculty by reason of the foregoing rule. A candidate who has not passed three-quarters of the total credits for which he is registered may be authorized to continue his studies if exceptional reasons for so doing exist.

16. No candidate will be granted a B.C.L. or an LL.B. degree unless he has been in full-time attendance at the Faculty for a period of at least three academic years following his first registration in First year.

    No candidate will be granted both the B.C.L. and LL.B. degrees unless he has been in full-time attendance at the Faculty for a period of at least four academic years following his first registration in First year.

17. No candidate shall be eligible for any degree or degrees granted by the Faculty unless he completes the required number of credits for the same within five years of his first registration in First year.

    Under special circumstances, a candidate who has interrupted his studies after having completed at least thirty credits arising out of courses given in this Faculty may be permitted by the Dean or his delegate, upon recommendation of the Admissions Committee, to continue his studies. In such event, the period of interruption shall not be included in the calculation of the five year period.

Candidates proposing to apply for transfer from other law faculties are required to remain in residence for a minimum of two years at the University for the obtaining of a B.C.L. or LL.B. degree.

18. In his first year in the Faculty, a candidate shall register for all the courses listed in Appendix III (Part I, or Part II) designated as 1st year courses, depending on the program into which he has been accepted. In order to obtain credits for such courses, a candidate must obtain a passing grade.

    If the candidate obtains the grade of F in any of the First year courses, subject to Regulation 41, he shall (i) be obliged to re-register for and pass such courses, and (ii) not be allowed to register for any course for which any such First year course is a prerequisite.

19. In his subsequent terms, a candidate must register for and pass all courses indicated as obligatory in Appendix 1, depending on the program which he is following. Candidates proceeding to either of the legal professions of the Province of Quebec should register for all courses indicated in Appendix II. These courses must be taken in the order indicated in Appendix III. Candidates are referred to their local legal profession regulations.

    A candidate must obtain a passing grade in order to obtain credit in any course.

20. In no case shall a candidate who has obtained the grade of F in a course be allowed to proceed to courses for which such course is a prerequisite. Candidates who fail to obtain credit for a course which they are required to complete successfully and who do not write or who fail the supplemental examination must re-register for that course in the next term in which it is offered.

    Candidates who for medical reasons do not write the supplemental examinations shall write those examinations at the next regular examination session in which examinations in those courses are offered. Such candidates are not required to re-register for these courses but must obtain permission from the Dean or his delegate.

21. All grades obtained by a candidate shall be included in his transcript, including both grades in the course where a regular supplementary examination is written.

22. There is no limit as to the number of times that a candidate may re-register for a course, subject to regulation 17.

    Except as provided for in regulations 18 and 19, a candidate is not under the obligation to re-register for a course in which he has not obtained a passing grade.

23. A candidate who registers for a course a second time, or who re-takes a course in accordance with Regulation 20, must comply with all assignments.

24. It is not permissible for an essay or other paper to be submitted twice.

25. No thesis, essay, or paper, is, in the absence of the express permission of the Faculty, received by the Faculty otherwise than on the basis that, save as indicated thereon or therein, the candidate submitting it is its sole author, and that it has not been and is not concurrently being submitted to any other Faculty or University for any degree, diploma, or certificate, or for credit towards the same, or to this Faculty for any other course.

    Every degree, diploma, or certificate, and every credit towards them, is given in reliance on the truth of each of those representations.

    A breach of this regulation in relation to any assignment shall result in an F grade for that assignment and, in case of grave breaches, may also result in an F grade for the course in which the assignment was submitted.

25a. The following are the University Examination Regulations. Their breach, or the breach of any other rule, regulation or condition relating to examinations, whether established by or under the authority of the University, the Faculty, the Dean, or the Examiner, as the case may be, constitutes, according to circumstances, a breach of University discipline, and may be dealt with as such under the rules in force from time to time concerning University discipline.

i No candidate for examination may bring into the examination room any books, notes, or other material containing information pertaining to the examination unless such material is allowed by the examiner.

ii If books, notes, etc., cannot be left outside the examination room they must be put in a place designated by the Invigilator before the candidate goes to his seat. When needed, mathematical tables, etc., will be supplied in the examination room.

iii Talk or communication between candidates is forbidden.

iv Candidates must not use or attempt to use any improper source of information.

v Students writing examinations are responsible for arriving at the right time and place. The plea of inadvertence or forgetfulness cannot be accepted.

vi The doors of the examination room will be opened at the hour set for the start of the examination.*

vii Candidates are not permitted to leave the examination room until one half hour after the examination has begun, and in no case

before the attendance has been taken. A candidate who leaves before the examination is over must hand in an answer book. Candidates will not be permitted to enter the examination room more than one half hour after the beginning of the examination, except by special permission of the Dean or his representative.

viii Candidates must remain in their seats. If they wish to speak to the Invigilator (e.g. to ask for additional supplies) they should raise their hand.

ix Questions concerning possible errors, ambiguities, or omissions in the examination paper must be directed to the Invigilator, who will investigate them through the proper channels. The Invigilator is not permitted to answer questions other than those concerning the paper.

x No information of any kind that might be of assistance to another candidate is to be written on the question paper. All work must be done in the answer book provided and all books must be handed in. The books must not be torn or mutilated in any way.

xi At the close of the examination candidates must stop writing and hand in their books at once.

ANY BREACH OF THESE REGULATIONS WILL BE REPORTED TO THE CHIEF INVIGILATOR. IF THE OFFENCE IS SERIOUS IT WILL BE REPORTED TO THE SENATE BY THE DEAN OF THE FACULTY. A STUDENT FOUND GUILTY OF CHEATING OR ATTEMPTING TO CHEAT IS LIABLE TO EXPULSION FROM THE UNIVERSITY.

25b. In addition, and without prejudice to the application of disciplinary sanctions, if any, compliance with all such rules, regulations and conditions is a condition of obtaining credit for courses.

Failure to comply shall, according to the Dean's judgment as to the seriousness of the circumstances, result in an F grade for the particular examination or for the course as a whole, or a reduced grade in the one or the other.

25c. No candidate who fails a course as a result of the application of regulations 25 or 25b shall be entitled to take a supplemental examination in that course. Nevertheless, when in his discretion the Dean considers it just in the circumstances, he may permit a candidate to do so, provided the candidate is qualified in other respects to take that supplemental examination.

25d. The application of Regulations 25, 25b and 25c shall rest with the Dean or his delegate (not being the instructor for the course) who shall require the persons involved to appear before him so that he may dispose of the matter.

When it appears to an examiner, invigilator, or other person in authority that a breach of Regulation 25 or 25a has taken place, he shall note the alleged offence, and, where possible, the time thereof, on the paper, and report the matter promptly to the Dean.

25e. Regulations 25a to 25d shall be posted in a prominent place in the Faculty.

*No. 6 represents a variation from the University examination rules as authorized by the Senate of the University on April 30th, 1974.

3.5 EVALUATION OF STUDIES

26. Examinations, term papers and essays may be written in either English or French. Participation in Moot Courts may also be in either language. Examination questions are set in the language in which a course is given.

27. In order to obtain credits for his courses, a candidate must obtain a passing grade.

Grading will be as follows:
Pass
A (A + : see note)
B (B + : see note)
C
P: equivalence (see reg. 48);
Supp: passed after supplemental examination
Fail
F
F. supp: Fail after supplemental examination

NOTE: The grades of A+ and B+ are awarded to indicate superior performance in the A and B groups.

28. The work done by a candidate in any given course may be assessed on the basis of examinations, papers, essays or class, group, or tutorial participation, or other academic activity. However, all candidates in a course shall be subjected to at least one common type of assessment. Joint work by two or more students for credit is not permitted without the special leave of the instructor.

29. Essays and papers are due on the last day of the term in which they are being written unless otherwise indicated. Where any required paper or essay is not submitted on its due date, in the absence of a medical certificate or analogous circumstances, a reduction of one level of grading shall be made for each day (excluding Saturdays, Sundays and legal holidays) that the submission is late. Thus, for example, a paper that would have been graded A+ if it had been submitted on time, would be graded A if submitted one day late, B+ if two days late, B if three days late, and so on in accordance with the scale in regulation 27.

30. The assessment in First year courses (as enumerated in Appendix III) shall include a final written examination to which shall be allocated at least sixty per cent of the weight of grading allotted to each such course. Mooting and tutorials are not subject to the present regulation.

31. The following courses are to be treated for evaluation purposes as full-year courses: Obligations I, Contracts I, Torts I, Property IA, Trusts & Gifts I, Constitutional Law, Taxation I, Evidence IA, Legal Problems in the Government Control of Business.

32. Any oral examination shall be jointly conducted by the examiner and the co-examiner and the grade shall be given by the examiner in consultation with the co-examiner.

33. No candidate may take an examination or otherwise obtain credits for a course unless he has registered for the same and has completed the requirements save in the case anticipated in Regulation 18.

34. All grades are posted in a prominent place in Chancellor Day Hall after each examination session. Such posting shall constitute adequate communication of results for all purposes and candidates shall be deemed to have notice of their grades as of the date of posting.

35. There are three general examination sessions in the academic year: one regular session at the end of each term and one supplementary session to be held preceding the start of the fall term. Dates for the supplementary session shall be posted with the grades after the winter term.

36. Essays and other papers are written under the name of each candidate. Written examinations are anonymous, according to the procedure established by Faculty.

37. Written examinations shall have a maximum duration of three and one half hours inclusive of reading time.

38. When a candidate has not passed a course he has the right to a re-read of all written assignments in that course provided that:

    (i) in the case of examinations written at the end of the fall term he applies within seven days of the communication of the result; and

    (ii) In the case of examinations written at the end of the winter term he applies before June 10 and pays the prescribed fee (ten dollars for each paper with a maximum charge of fifty dollars) to McGill University. The fee shall be reimbursed should a passing grade be obtained after the re-read.

39. Written assignments which have been reread receive the grade which is given by the coexaminer in consultation with the examiner. Other assignments, if any, in the course, keep their grades unchanged. The grade assigned to the course as a whole is then recalculated, giving to the grade on each assignment its appropriate weight. Subject to the following rules, the course grade so recalculated is final.

40. Supplemental examinations are allowed subject to the present regulations. Candidates shall be admitted to (i) *regular* supplemental examinations where having obtained the grade of F in a course, they satisfy the conditions below, or (ii) *special* supplemental examinations in cases where they have been excused from earlier assessments or regular examination sessions by reason of illness or analogous causes. Supplementals in mooting consist of the writing of new factums and the presentation of fresh oral arguments. When a candidate fails an essay that he has elected to write as a course, or fails a course as a result of failing a paper constituting part of the weight of grading in a course, he may apply to be authorized to write a supplemental to the Dean or his delegate who shall make a decision in the light of the circumstances after consultation with the professor involved as to whether permission should be granted. If a supplemental is allowed it shall consist of the writing of a new essay or paper on the same or a different topic, or a rewriting of the failed essay or paper, or the writing of a regular supplemental examination, as indicated in the decision. Supplementary papers or essays shall be handed in, in the case of a fall-term failure, by the last day of lectures in the winter term or by the first day of the August examination session, at the option of the student, and in the case of a winter-term failure, by the said date in August.

41. No candidate shall be admitted to regular supplemental examinations if, under Regulation 15, he must withdraw from the Faculty, nor may any candidate write more than the following number of regular supplemental examinations:

    (i) one supplemental examination in a course worth more than seven credits; or

    (ii) two supplemental examinations in a course or courses worth altogether seven or fewer credits.

42. By commencing to write any examination, a candidate waives the right to plead any causes which would entitle him to a *special* supplemental, unless these causes occur in the course of the examination.

43. Application for *regular* supplemental examinations must be made by June 1st or the first business day thereafter, and must be accompanied by the prescribed fee (ten dollars for each paper with a maximum of twenty dollars) to McGill University.

Special supplemental examinations are granted within the discretion of the Dean or his delegate. Applications for such supplemental examinations by candidates must be made to the Dean or his delegate through the Student Affairs' Office on the form provided prior to, and in no case later than, the end of the relevant examination session. Exception will only be made where it is established that the medical condition or personal difficulties of the student made it impossible to comply with this requirement. The application must be made in writing and be accompanied by the prescribed fee ($10 per paper with a maximum of $50). Any student unable to present himself at an examination for medical or compassionate reasons must communicate with the Student Affairs' Office prior to or within 24 hours of the examination in order to indicate the name of his doctor or the circumstances justifying his absence and such persons as may attest thereto. The Student Affairs' Office will, in the case of medical reasons, send the student's physician the Faculty's official Medical Certificate, which requires the physician to certify that, in the physician's opinion, the student was not fit to write the examination in question. No other medical certificate will be accepted for the purposes of granting a medical exemption. This requirement for medical certificates applies to all examinations, including mid-term examinations in one-semester courses. The Dean or his delegate may, at his discretion, exempt a student from writing an examination on compassionate grounds, such as the death or serious illness of persons in the student's immediate family.

44. Supplemental examinations are written at the Faculty in the month of August. The grade obtained in supplemental examinations is the grade of the course as a whole, and is final and not subject to appeal. The grade first obtained in the course shall be included in the transcript in all cases, followed by the grade obtained as a result of a supplemental examination.

When a candidate has not passed a special supplemental examination he has the right to a re-read of all written assignments in that course provided that he applies within seven days of the communication of the result and pays the prescribed fee ($10 per paper with a maximum of $50) to McGill University. The fee shall be reimbursed should a passing grade be obtained after the re-read.

45. Grades obtained by candidates as a result of supplemental examinations shall appear as follows on their transcripts:

i) where the supplemental examination was taken after the grade of F was obtained in a course, a passing grade shall be indicated as "C Supp." (passed after supplemental examination), and a failing grade shall be indicated as F Supp. (failed after supplemental examination);

ii) where a student has failed a regular examination or supplemental examination and re-registers for a course, the highest he can obtain in that course is the grade of "C";

iii) where the supplemental examination was taken as a result of illness or analogous causes, the regular grades, as set out in regulation 27, shall apply.

46. Honours points are awarded as follows:

Grade in Course	**Honours Points**
A+	4 honours points (per credit)
A	3 honours points (per credit)
B+	2 honours points (per credit)
B	1 honours point (per credit)
F, F. Supp.	Minus 1 honours point (per credit)

No honours points are awarded for grades of C,P, Supp. However, negative honours points shall be calculated in the candidate's average where the grade of F or F. Supp. is obtained.

Final honours are awarded on the basis of the honours points average.

The honours points average is calculated by multiplying the number of honours points obtained in each course by the number of credits allotted to that course (including the double set of minus honours points where regular supplemental examinations are written and failed), adding all the products so obtained, and dividing that total by the sum of the credits of all the courses for which the candidate registered, including double sets of credits where regular supplemental examinations are written and including generally all courses in which he obtained C, Supp., F or F Supp. but excluding all courses where the candidate obtained P.

47. Degrees in the Faculty are granted as follows:

— First class honours: honours points average of 2.5 and over.

— Upper Second class honours: honours points average of 1.5 and over.

— Second class honours: honours points average of 0.8 and over.

— Pass

48. Credits are given as follows as equivalences (regulation 27):

	Credits 1st term	2nd term
a) Legal Clinic (where this has been elected, and upon the recommendation of the Attorney-Director of the Clinic).	2	2
b) McGill Law Journal (upon the recommendation of the Faculty adviser)		
i) Editor in Chief (496-041D)		6
ii) Executive Editor (496-042D)		4
iii) Managing Editor (496-042D)		4
iv) Fifteen members of Senior Board (each) (496-043D)		2
c) Moot Court Board (upon the recommendation of the Faculty adviser)		
i) Chairman (496-044D)		4
ii) Vice Chairman (496-045D)		3
iii) Four members of the Senior Board (each) (496-046D)		2
d) Courses completed and passed outside this Faculty (regulation 10)		
e) Group Assistants (see regulation 56)	2	2

49. (1) Final Transcripts of candidates who have successfully obtained a B.C.L. or LL.B. degree shall include the following:
    a) the grade obtained in each course;
    b) the credit weight of each course;
    c) the classification of the degree determined in accordance with regulation 47;
    d) a list of prizes granted.
    (2) Interim transcripts shall include:
    a) the grade obtained in each course;
    b) the credit weight of each course;
    c) a list of prizes granted.

3.6 TUTORIALS AND MOOTING

50. Each candidate shall in the winter term of his First year participate in the Faculty's Moot Court and Group Tutorial programs. Each candidate shall, in the fall term of second year, participate in the post-First year Mooting Program to the extent of at least one round.

3.7 GROUP ASSISTANTS

51. Group assistants are students who assist in the teaching of certain courses. They must have successfully completed at least two terms in the Faculty.

52. Those courses in which there will be openings for Group Assistantships will be announced. Candidates desiring to act as Group Assistants in one of those courses will so indicate in their course registration sheets. The Dean or his delegate, together with the professors in charge of the courses involved, will select the Group Assistants from amongst those who have indicated their desire to serve.

53. In making the selection of candidates, the Dean or his delegate and the professors involved shall rely, *inter alia*, on the overall academic performance of each candidate.

54. A candidate may not hold more than one Group Assistantship per term.

55. Group Assistantships carry a weight of two credits per term. A Group Assistant meets with the professor in charge of the course and with the First year group as specified by the professor. At the end of the course, the Group Assistant files a report containing an assessment of the work done, of the methods used and of his own performance.

56. The authorization of equivalence (see regulations 48 and 27) shall be given by the professor in charge of the course and shall be based on the candidate's performance and on his final report.

3.8 CHANGES IN REGULATIONS

57. These Regulations and the other provisions contained in this Announcement are subject to change at any time.

3.9 APPENDIX I

Obligatory Courses for B.C.L. and LL.B. Candidates

Part I: B.C.L. DEGREE

		Credits 1st term	2nd term
1. Civil Law Courses			
472-140D	Obligations I	4	4
473-144A	Property I	3	
473-145B	Property II		3
472-119B	Civil Procedure and Evidence I		3
473-253A	Special Contracts I	3	
473-255B	Successions		3
475-273A	Family Law I	3	
2. Common Law courses			
	one of the following:		
482-142D	Contracts I	3	3
OR			
485-179D	Torts I	3	2
OR			
483-146D	Property IA	2	2
483-149B	Property IIA		2
3. National courses			
491-101D	Constitutional Law I	3	3
491-111B	Criminal Law I		3
492-116A	Foundations of Canadian Law	3	
471-316B	Private International Law		3
476-187D	Tutorials	2	
476-185D	Mooting I		1
476-186D	Mooting II		1

PART II: LL.B. DEGREE

1. Common Law courses			
482-142D	Contracts I	3	3
485-179D	Torts I	3	2
483-146D	Property IA	2	2
483-149B	Property IIA		2
482-236B	Civil Procedure IIA		3
2. Civil Law courses			
N.B. SENATE AUTHORIZATION PENDING AT TIME OF PUBLICATION.			
472-140D	Obligations I	4	4
473-144A	Property I	3	
473-145B	Property II		3

and any one of the following (making a minimum of 16 civil law credits):

		Credits		
		1st term		*2nd term*
473-456A	Family Law II	2		
473-255B	Successions			3
473-253A	Special Contracts I	3		
473-254B	Special Contracts II			3
	A Comparative Law course as offered from time to time and designated as such in the Faculty Announcement or by notice.	2	or	2

3. National courses

491-101D	Constitutional Law I	3		3
491-111B	Criminal Law I			3
492-116A	Foundations of Canadian Law	3		
476-187D	Tutorials	2		
476-185D	Mooting I			1
476-186D	Mooting II			1

3.10 APPENDIX II

Recommended Courses for Candidates Proceeding to the Legal Professions

PART 1: BAR OF QUEBEC

1. Quebec Law

		1st term		*2nd term*
472-416A	Civil Procedure II	2		

2. National Law

494-366A	Business Associations I	2		
494-367B	Business Associations II			3
491-313D	Taxation I	2		2
494-465A	Banking & Negotiable Instruments	2		
493-435A,B	Bankruptcy	2	or	2
495-369A	Labour Law I	3		
491-422B	Criminal Law II			3
491-401A,B	Administrative Law I OR	3	or	3
491-403B	Municipal Law OR			2
483-145A	Land Use Planning OR	2		
491-409B	Civil Liberties			2

PART II: NOTARIAL PROFESSION – QUEBEC

Candidates are referred to the regulations of the Board of Notories.

PART III: ONTARIO

Extract from the Regulations of the Law Society of Upper Canada: "3.*Curriculum*"

(a) An approved law school shall offer instruction regularly in the following areas:

Agency
Banking and Bills of Exchange
Civil Procedure
Company Law
Conflict of Laws
Constitutional Law
Contracts
Criminal Law and Procedure
Equity
Evidence
Family Law
Jurisprudence or one subject

of a jurisprudential nature
Labour Law
Legal History
Legislation and Administrative Law
Municipal Law
Partnership
Personal Property
Real Estate Transactions
Real Property
Sale of Goods
Taxation
Torts
Trusts
Wills and Administration of Estates

(b) It is understood that the different subject areas may be variously combined or subdivided at the different law schools, hence the above list should be regarded as indicating areas of the law in which instruction will be regularly offered. The list should not be regarded as necessarily establishing courses that must be taught separately or in combination under these specific labels. For example, 'Legislation' and 'Administrative Law' might be two separate courses under those names, whereas 'Personal Property' and 'Real Property' might be combined into a single course entitled 'Property'. Or, under a heading like 'Remedies', substantial parts of 'Civil Procedure', 'Contracts' and 'Property' might be combined. The same sort of thing could be done under the heading 'Commercial Law'.

(c) Every student shall be required to take the major basic course offered in each of the following subject areas:

Civil Procedure
Constitutional Law of Canada
Contracts
Criminal Law and Procedure
Personal Property
Real Property
Torts

(d) It is understood that subject to subparagraph 3 (c), the academic planning authority of each approved Law School may provide any or all courses to its students on a required or an optional basis, may require students to elect between alternative courses or groups of courses to attain either diversification or specialization to an extent deemed desirable and may add courses to its curriculum on a required or an optional basis or an optional basis in subject areas other than those listed in subsection 3 (a)."

PART IV: NEWFOUNDLAND

Applicants for admission to the Law Society of Newfoundland who graduated in 1974, or thereafter, *must include* in their program of studies major courses in the following areas:

Canadian Constitutional Law
Civil Procedure
Contracts
Criminal Law and Procedure
Personal Property
Real Property
Torts

and, in addition, *should include* two major basic courses in the following subject areas:

Commercial Law
Corporation Law
Evidence
Family Law
Wills and Trusts
Shipping

Applicants whose academic qualifications do not include the recommended subject areas may be ineligible for admission to the Law Society of Newfoundland without further exams in subject areas not included in their academic programs.

PART V: OTHER PROVINCES

*Subjects considered as of prime importance for the practice of the law in the Common Law Provinces:*As noted above, the Law Society of Upper Canada in 1969 reduced the number of subject areas in which instruction was to be mandatory from 23 to 7, namely Civil Procedure, Constitutional Law, Contracts, Criminal Law and Procedure, Personal Property, Real Property and Torts. This reduction was a cause of concern to the Bars of certain other provinces, the opinion being held by some being that unless certain other courses were also taken, candidates would not be adequately prepared for the practice. Rather than reducing the portability of LL.B. degrees from one province to another by the stipulation of additional compulsory courses, it was decided that the attention of candidates should be drawn to certain additional subjects that are considered to be of prime importance for the practice of law. These are Family Law, Evidence, Wills and Trusts and Commercial and Corporation Law. Candidates are accordingly advised to take these additional courses. Those who do not take them will not be refused admission to the Bar, but the Bars in question will review the regulations as to subjects required to be taken after experience has been gained as to whether the candidates who present themselves have taken a sufficiently broad range of subjects.

NOTE: The subjects listed as being required or desirable for Bar purposes are in some instances taught by the Faculty under different course names.

The Law Society of Alberta requirements concerning training in legal accounting: Text of resolution passed by the Benchers of the Law Society of Alberta in May 1973: "That the Benchers authorize the Education Committee to communicate with all law schools to the following effect: – "That all Law Schools be advised that there will be in Alberta, as of the 1975 Bar Admission Course and subsequent years, a two-hour examination in Legal Accounting and the Society's Rules with respect to accounting and trust accounts, but those persons who in their law course have passed a course in Legal Accounting will be exempt from this part of the Bar Admission examination"."

3.11 APPENDIX III: DEGREE PROGRAMS

PART I: B.C.L. DEGREE

		Credits	
		1st term	*2nd term*
1) First Year			
a) Civil Law courses			
472-140D	Obligations I	4	
473-144A	Property I		4
473-145B	Property II	3	
472-119B	Civil Procedure and Evidence I		3
			3
b) National courses			
492-116A	Foundations of Canadian Law	3	
491-101D	Constitutional Law I	3	
491-111B	Criminal Law I		3
476-187D	Tutorials I		3
476-185D	Mooting I	2	
			1
2) Second Year			
a) Civil Law courses			
473-253A	Special Contracts I	3	
475-273A	Family Law I	3	
473-255B	Successions		3
b) National courses			
494-366A	Business Associations I	2	
494-367B	Business Associations II		3
491-313D	Taxation I	2	2
495-369A	Labour Law I	3	
491-422B	Criminal Law II		3
476-186D	Mooting II		1
c) Electives			

Maximum of twelve (12) credits over both terms.

NOTE: Students intending to take the National Program (the LL.B. IV year) are advised to take either Property IA and Property IIA, Contracts I, or Torts 1 as one of their electives.

3) Third Year

		Credits 1st term		2nd term
a) Civil Law courses				
472-416A	Civil Procedure II	2		
b) National Courses				
494-465A	Banking and Negotiable Instruments	2		
493-435A,B	Bankruptcy	2	or	2
471-316B	Private International Law			3
and one of the following:				
491-401A,B	Administrative Law	3	or	3
OR				
491-403B	Municipal Law			2
OR				
483-145A	Land Use Planning	2		
OR				
491-409B	Civil Liberties			2
c) Common Law courses				
one of the following:				
482-142D	Contracts I	3		3
OR				
485-179D	Torts I	3		2
OR				
483-146D	Property IA	2		2
483-149B	Property IIA			2
d) Electives				
	Maximum of twenty-one (21) credits over both terms.			

PART II: LL.B. DEGREE

1) First Year

a) Common Law courses				
483-146D	Property IA	2		2
483-149B	Property IIA			2
482-142D	Contracts I	3		3
485-179D	Torts I	3		2
b) National courses				
492-116A	Foundations of Canadian Law	3		
491-101D	Constitutional Law I	3		3
491-111B	Criminal Law I			3
476-187D	Tutorials I	2		
476-185D	Mooting I			1

2) Second Year

		Credits		
		1st term		*2nd term*
a) Common Law courses				
482-236A	Civil Procedure IIA			3
b) National courses				
476-186D	Mooting II			1
c) Civil Law courses				
N.B. SENATE AUTHORIZATION PENDING AT THE TIME OF PUBLICATION.				
472-140D	Obligations I	4		4
473-144A	Property I	3		
473-145B	Property II			3
	and any one of the following (making a minimum total of 16 civil law credits):			
473-456A	Family Law II	2		
473-255B	Successions			3
473-253A	Special Contracts I	3		
473-254B	Special Contracts II			3
	A Comparative Law course as offered from time to time and designated as such in the Faculty Announcement or by notice.	2	or	2

NOTE: In their second year common law students are advised to register for a number of the civil law credits required for the obtaining of the LL.B. degree from the courses listed above.

d) Electives

A maximum of thirty-two (32) credits over both terms.

3) Third Year

a) Civil Law courses

N.B. SENATE AUTHORIZATION PENDING AT TIME OF PUBLICATION.

472-140D	Obligations I	4		4
473-144A	Property I	3		
473-145B	Property II			3
	and any one of the following (making minimum total of 16 civil law credits):			
473-456A	Family Law II	2		
473-255B	Successions			3
473-253A	Special Contracts I	3		
473-254B	Special Contracts II			3
	A Comparative Law course as offered from time to time and designated as such in the Faculty Announcement or by notice.	2	or	2

NOTE: In their third year common law students must complete the civil law credits required for the obtaining of the LL.B. degree from amongst those listed above.

b) Electives

A maximum of thirty-six (36) credits over both terms.

3.12 APPENDIX IV

Obligatory Courses for the National Program (Double Degree)

PART I: LL.B. DEGREE (AFTER B.C.L.)

In order to gain admission, the holder of a B.C.L. degree must have taken and passed, during the B.C.L. program, Property IA & IIA, and either Contracts I, or Torts I.

NOTE: Because of the heavy contract law content of a number of the obligatory courses in the LL.B. IV, it is recommended that the students who intend to proceed to LL.B. IV, or wish to keep that option open, take Contracts I rather than Torts I.

	1st term	*2nd term*
Property IA	2	
Property IIA		2
Contracts I	3	
Torts I		3
Trusts & Gifts I	3	
Real Estate Transactions		2
Evidence IA	4	
Family Law IA	3	
Commercial Transactions	4	
Civil Procedure IIA		3

PART 2: B.C.L. DEGREE (AFTER LL.B.)

In order to gain admission, the holder of an LL.B. degree must have taken and passed, during his LL.B. program, Obligations I and Property I & II. (It is to be noted that candidates entering the first year of the LL.B. program in 1972–73 or subsequent years are obliged to take in their LL.B. program a larger number of basic civil law courses whether or not they intend to proceed subsequently to the B.C.L. degree.)

Obligations I	4	4
Property I	3	
Property II		3
Family Law I	3	
Successions		3
Civil Procedure & Evidence I		3
Special Contracts I	3	
Civil Procedure II	2	
Business Associations I & II	2	3
Private International Law		3

Note: The attention of candidates intending to proceed to the Bar of Quebec is drawn to the fact that they should have taken and passed the courses listed in Appendix III, Part I.

4 COURSES OF INSTRUCTION

N.B. The courses and seminars sponsored by the Institute of Comparative Law open to undergraduate students in the Faculty are included in this list. Enrolment in them may however be limited on the basis of restricted numbers or academic record.

493-436A. ACCOUNTING. (2 hours, first term). General principles of accounting of interest to members of the legal profession. A student who has taken a university or CEGEP level or an equivalent level accounting course is excluded from this course.
Mr. Hitzig

483-452B. ADMINISTRATION OF DECEASEDS' ESTATES. (LL.B.) (2 hours, second term). Wills: the requirements for a valid testamentary instrument,

revocation, republication, incorporation by reference, and construction. Intestate succession; mode of descent. Appointment, powers and duties of personal representatives; collection and realisation of assets, payment of debts; distribution of assets, including problems of lapse and class gifts, legacies, including abatement and ademption. Overall the course will concentrate on problematic areas of the law rather than attempt a comprehensive survey of the law of wills, intestacy and administration. *Prerequisite:* Trusts and Gifts I, first term.
Professor Waters

491-401A or B ADMINISTRATIVE LAW I (3 hours, first or second term). The relationship between law and the administrative process; problems of delegation; procedures and powers of administrative tribunals; judicial and legislative control of administrative action.
Professor Jones (Section 01)
Mr. Grey (Section 02)

494-460B. ADMIRALTY. (2 hours, second term). Admiralty courts and jurisdiction, liens, carriage of goods by sea, salvage, collisions, and limitations of liability.
Professor Lasok

494-464A. ADVANCED CORPORATION LAW. (3 hours, first term). Seminar on various corporate problems; aspects of study include corporate management and responsibility, shareholders' rights and securities regulation. *Prerequisites:* Business Associations I & II.
Professor Caron

491-407A. AIR AND SPACE LAW. (2 hours, first term). The legal regime of air space and outer space, review of the more important activities in these environments, including international flights, and their legal regulations. Administrative and private air law in Canada.
Professor Bradley

494-465A. BANKING AND NEGOTIABLE INSTRUMENTS. (2 hours, first term). Canadian law of negotiable instruments, with particular emphasis on the Bills of Exchange Act. The concept and attributes of negotiability. Bills of exchange, cheques, and promissory notes. Aspects of the law of moveable property; nature of ownership; the owner's remedies; their application to negotiable instruments; money as property and rights of recovery and tracing; assignment of debts, documents of title. Banker and customer; banker's security; letters of credit; credit cards and other recent developments. The relationship of federal and provincial laws.
Professor Scott (Section 01)
Mr. Cobbett (Section 02)

493-435A or B. BANKRUPTCY AND INSOLVENCY. (2 hours, first or second term). Bankruptcy and insolvency in Canadian law. Scope, operation, and content of the relevant federal and provincial laws, with particular emphasis on the Bankruptcy Act, Winding-up Acts, related statutes, and the general provincial law. Creditors' rights.
Professor Vallée-Ouellet (Section 01)
Mr. Mendelsohn (Section 02)

494-366A & 367B. BUSINESS ASSOCIATIONS I & II. (2 hours, 1st term; 3 hours, 2nd term). The first course is devoted to the different forms of business associations; mandate or agency, partnerships, cooperatives, the nature of corporate personality; the two systems of incorporation; constitutional aspects. The second course is devoted to the raising and maintenance of a company's capital; the organs of the company, investors' protection; protection of minority shareholders, reconstruction and amalgamation of companies. Common Law students are advised to take Professor Foster's section of Business Associations I.
BUSINESS ASSOCIATIONS I:
Professor Foster (Section 01)
Professor Durnford (Section 02)
Mr. Sarna (Section 03)
BUSINESS ASSOCIATIONS II:
Professor Durnford (Section 01)
Mr. Sohmer (Section 02)
Mr. Pascal (Section 03)

494-475B. BUSINESS PLANNING. (2 hours, second term). This seminar will deal with problems in the corporate law field. The treatment will include taxation and general civil and commercial law aspects. *Prerequisites:* Business Associations I & II and Taxation I.
Mr. Echenberg

472-459B. CIVIL EVIDENCE II. (B.C.L.) (2 hours, second term). Principles of Law of Evidence with emphasis on substantive rules in civil law.
Hon. Mr. Justice Meyer

491-409B. CIVIL LIBERTIES IN CANADA. (2 hours, second term). The "condition" of civil liberties in Canada, with particular reference to the laws of Quebec and Ontario and the historical development and status of civil liberties in Canadian constitutional law. Among the subjects to be treated are language and educational rights.
Professor Morel
(French will be the principal language of instruction).

472-119B. CIVIL PROCEDURE AND EVIDENCE I. (B.C.L.) (3 hours, second term). A general introduction to the Canadian judicial system, civil procedure in Quebec (up to but excluding trial) and evidence.
Professor H. Patrick Glenn (Section 01)
Mr. Stein (Section 02)

472-416A. CIVIL PROCEDURE II. (B.C.L.) (2 hours, first term). Trial, including examinations on discovery in the Superior Court; provisional remedies, including injunctions; remedies against judgements (revocation and appeal). *Prerequisites:* Civil Procedure and Evidence I.
Mr. Holden

482-236B. CIVIL PROCEDURE IIA. (LL.B.) (3 hours, second term). Common law historical development of the rules of procedure and forms of action; traditional common law remedies; pleadings, motions and discovery; forms of trial and methods of proof; rules and organization of the courts, jurisdiction and judgements. Emphasis on Ontario Judicature Act and Rules of Practice.
Mr. King

472-419B. CIVIL PROCEDURE III. (B.C.L.) (2 hours, second term). Selected topics in Civil Procedure, including trial by jury, execution, prerogative writs, proceedings related to marriage, proceedings concerning immoveables, procedure in the Federal Court.
Mr. Nuss

494-462A. COMMERCIAL TRANSACTIONS. (LL.B.) (4 hours, first term). Sale of goods and secured transactions.
Professor Field

389-670B. COMPARATIVE AND INTERNATIONAL PROTECTION OF MINORITIES' RIGHTS. (2 hours, second term). A seminar adopting an international and comparative law approach to the study of the protection of racial, religious and linguistic minorities; definition of concept; early experiments and the experience of the League of Nations; the United Nations with particular reference to its Sub-Commission on the Prevention of Discrimination and the protection of Minorities; representative national legal institutions including those of Belgium, Switzerland, Finland, Yugoslavia, Czechoslovakia, the Soviet Union and Canada. Each participant will be expected to lead a discussion on an appropriate subject on which an essay will also be required. There will be no written examination. This course is open to undergraduates as a "Comparative Law Course" within the Faculty.
Professor Humphrey
N.B. SENATE AUTHORIZATION PENDING AT TIME OF PUBLICATION.

389-650A. COMPARATIVE CIVIL LIABILITY. (2 hours, first term). A comparative study of selected contemporary problems in the field of civil responsibility. Areas of concern include: economic loss, privacy, mental suffering, prenatal injury, and the role of strict liability. This is a graduate course open to undergraduate students and avails as a "Comparative Law Course". *Prerequisites:* Obligations I or Torts I.
Professor H. Patrick Glenn

389-630A. COMPARATIVE COMPANY LAW AND THE MULTINATIONAL COMPANY: LAW AND PRACTICE. (2 hours, first term). A comparative evaluation of Anglo-American and Continental company law systems – the harmonization of company laws within the European Common Market, and the 'European Company' – international and multinational companies – structure and management of the multinational company – government control of the multinational company – international controls and the multi national company – anti-monopoly legislation and the multinational company – the Canadian experience. This course is open to undergraduate students as a "Comparative Law Course" and also to students in the Faculty of Management.
Professor Hahlo

389-651B. COMPARATIVE MEDICAL LAW (2 hours, second term). A comparative study of selected contemporary medico-legal problems including civil and criminal liability of doctors and hospitals, consent, medical and hospital contracts, emergency services, organ transplants, death, euthanesia, abortion, sex reassignment, experimentation and medical ethics. This course is open to undergraduates as a "Comparative Law Course" within the Faculty. *Prerequisites:* Obligations I or Torts I.
Professor Crépeau
Professor Kouri
N.B. SENATE AUTHORIZATION PENDING AT TIME OF PUBLICATION

389-634A. COMPARATIVE PRIVATE INTERNATIONAL LAW (2 hours, first term). The comparative study of basic rules of conflict of laws and enforcement of foreign judgements in the civil and common law systems, with particular reference to international and inter-regional unification efforts. This course is open to undergraduates as a "Comparative Law Course" within the Faculty. *Prerequisite:* Private International Law I (undergraduate).
Professor Groffier-Atala
N.B. SENATE AUTHORIZATION PENDING AT TIME OF PUBLICATION.

491-101D. CONSTITUTIONAL LAW I. (3 hours, throughout the year). A comprehensive treatment of the theory, law and practice of the constitution, including legislative, executive and judicial institutions in Canada. The rule of law in executive government and in the lawmaking process. Parliamentary sovereignty, constitutional amendment, and the federal system. A problem approach, with opportunity to draft bills and legal proceedings, will be attempted, in order to develop skills useful in the practice of law.

It will be assumed that students have a basic acquaintance with Canadian governmental institutions, either through a course on Canadian government, or through the reading of one or more basic texts. Students are referred in this connection to the current edition of R. MacGregor Dawson, *The Government of Canada,* and to James R. Mallory, *The Structure of Canadian Government.*
Professor de Mestral (Section 01)
Professor Scott (Section 02)

485-483A. CONSUMER PROTECTION. (2 hours, first term). A seminar requiring active student participation dealing with a number of selected topics (advertising, product safety, control of interest rates,

etc.) primarily of concern to the individual in his capacity as a consumer. The perspective will be essentially economic and substantial attention will be paid to the evaluation of specific rules within the topic areas concentrated upon in terms of the costs, and the distribution of the costs, which these rules impose upon society at large. *Prerequisites:* Special Contracts I or Commercial Transactions or permission.
To Be Announced

482-142D. CONTRACTS I. (LL.B.) (3 hours, throughout the year). A study of the general theory and basic principles of the common law of contract in Canada – offer and acceptance, consideration, intent to create legal relations, privity and terms; standard form contracts, mistake, misrepresentation and discharge.
Professor Foster (Section 01)
Professor Eliasz (Section 02)

491-111B. CRIMINAL LAW I. (3 hours, second term). The exploration of major problems in criminal law and its administration; emphasis on basic concepts which govern the implementation of the Criminal Code in Canada.
Professor Sklar (Section 01)
Mr. Yarosky (Section 02)

491-422B. CRIMINAL LAW II. (3 hours, second term). Principles of the law of criminal evidence and procedure. *Prerequisite.* Criminal Law I.
Mr. Fish (Section 01)
Mr. Proulx (French Section 02)
Mr. Shadley (Section 03)

491-421A. CRIMINAL LAW IV. (CRIMINAL LAW AND SOCIETY). (2 hours, first term; not given 1976-77). This seminar will focus upon selected areas of human belief and behaviour (such as corporate crime, faith-healing, child abuse, and killings committed under circumstances of extreme provocation) which the law-maker has traditionally sought to control through the use, among other instrumentalities, of the criminal law. The seminar will critically examine, in the context of such areas, the effectiveness of the criminal law in controlling human conduct. The materials will be interdisciplinary in character. It will be open to a limited number of students from Law, the Behavioural Sciences, Political Science and Religious Studies. *Prerequisite:* Criminal Law I or the approval of the instructor.

491-418A. CRIMINOLOGY I. (2 hours, first term; not given 1976-77). A study of the aims of the penal system with particular reference to defining limits of the scope of criminal behaviour and the purposes of punishment. *Prerequisite:* Criminal Law and Procedure I.

491-419A. CRIMINOLOGY II. (The Processing of the Offender: Legal, Psychiatric and Social Work prospectives) (2 hours, first term). An examination of the role of the lawyer, psychiatrist and social worker in the processing and treatment of offenders. Problems characteristic of practice in each of these professions will be studied as they interact in the criminal process. The seminar will be conducted jointly by faculty members drawn from Law, Psychiatry and Social Work. It will be open to a limited number of students in Law, Medicine and Social Work who have a particular interest in the field of criminology. A previous course in criminal law, criminology or corrections or the approval of the instructors.
Professor Sklar with
Dr. C. Angliker of the Forensic Psychiatry Clinic,
and Dr. P. Deehy of the School of Social Work

495-471A. ENVIRONMENT AND THE LAW. (2 hours, first term). The basic objective of the seminar is to examine the actual and potential role of law in protecting the integrity of the human environment from threats posed by scientific and technological advances, rapid industrialization and population growth. Emphasis will be placed on the following subjects: air, water and sea pollution; hazards caused by the uses of nuclear energy; weather modification. If time permits, the inquiry will extend to other environmental hazards.
Professor Vlasic

389-636A. EUROPEAN COMMUNITY LAW I (2 hours, first term). An introduction to the study of European Community Law and legal institutions, with particular reference to the Treaty of Rome and subsequent instruments. This course is open to undergraduate students.
Professor Lasok
Professor Eliasz

N.B. SENATE AUTHORIZATION PENDING AT TIME OF PUBLICATION.

389-637B. EUROPEAN COMMUNITY LAW II. (2 hours, second term). A study of selected topics in European Community Law, particularly European Commercial Transactions. It will also examine the legal implications of Canadian participation in the European Economic Community. This course is open to undergraduate students. *Prerequisite:* European Community Law I or its equivalent.
Professor Lasok
Professor Eliasz

N.B. SENATE AUTHORIZATION PENDING AT TIME OF PUBLICATION.

482-418A. EVIDENCE IA. (LL.B.) (4 hours, first term). The development of Common Law principles of civil and criminal evidence and relevant policy considerations. Stress will be placed on such areas as relevancy and admissibility; hearsay rule; advocacy and trial tactics; function of judge and jury; relationship of rules of evidence to problems of deception, perception and memory; credibility.
Professor Sklar

475-273A. FAMILY LAW I. (B.C.L.) (3 hours, first term). The existence and attributes of physical persons, their capacity and incapacity by reason of age, relationship and mental facilities; the family; husband and wife; the law of marriage; its formation and its effects, especially with respect to the rights and duties of the consorts and their property; separation, the annulment of marriage and divorce.
Professor Groffer Atala (Section 01)
Mr. Grey (Section 02)

485-472A. FAMILY LAW IA. (LL.B.) (3 hours, first term). Marriage and divorce; the matrimonial property regime of the common law provinces; parent and child; guardian and ward; interstate succession and dependents' relief.
Professor Bissett-Johnson

473-456A. FAMILY LAW II. (MATRIMONIAL PROPERTY LAW). (B.C.L.) (2 hours, first term). The effect of marriage on the property rights of married persons, and their relations with third persons; the matrimonial regimes of the Quebec Civil Code. *Prerequisites:* Family Law I and Property I.
Professor Groffier Atala

486-456B. FAMILY LAW III: LAW RELATING TO CHILDREN (B.C.L. or LL.B.) (2 hours, second term). This course will require active student participation and should be suitable for both Law and Social Work students. It will concern itself with the legal and social problems of legitimacy, illegitimacy, and legitimation, custody and access disputes, kidnapping cases, the role and responsibility of step and foster parents, parental rights and the adoption process. The course will be taught on the seminar basis and assessment may be on the basis of term papers and class participation
Professor Bissett-Johnson
N.B. SENATE AUTHORIZATION PENDING AT TIME OF PUBLICATION

483-453A. FINANCING REAL ESTATE TRANSACTIONS (B.C.L.) (2 hours, first term). Particular emphasis will be placed on the protection to be given the hypothecary creditor, the methods of financing land acquisition and development; the special problems related to the financing of construction projects; the development of the emphyteutic lease and the net lease as a form of finance, the role of the lawyer in giving economic advice to his clients. *Prerequisites:* Property I & II.
Mr. Mettarlin

492-116A. FOUNDATIONS OF CANADIAN LAW (3 hours, first term). An introduction to the institutional and philosophical foundations of Canada's two legal systems, with emphasis on some basic principles of Canadian public law.
Professor H. Patrick Glenn (Section 01)
Professor Lasok (Section 02)

125-401A or B. FRENCH LEGAL TERMINOLOGY/FRANCAIS JURIDIQUE (2 hours, either term). Ce cours a pour but d'amener les étudiants, futurs légistes, au point où ils pourront exercer leur profession, en français, dans la Province. Ce n'est pas un cours de français général ni un cours de révision; c'est un cours avancé et spécialisé, qui suppose au départ une bonne connaissance du français usuel, parlé et écrit. Les travaux pratiques se feront sous forme de débats, de rapports oraux et écrits, etc.

Le cours est réservé en principe aux étudiants de dernière année. D'autres étudiants seraient admissibles dans les limites de la disponibilité des places. Les effectifs sont limités.

Un examen de classement, obligatoire, aura lieu au moment des inscriptions. Pour plus de précisions, consulter les affiches au Département de français ou à la Faculté de droit.

This course avails as a "non-law" credit within the meaning of Regulation 10.
Professor Groffier Atala
and Mr. Reed

494-461A. INSURANCE (2 hours, first term). This course deals with the general principles of insurance law, with emphasis placed on the contract of insurance. *Prerequisite:* Obligations I. French will be the principal language of instruction
Mme. Sinclair

494-463A. INTELLECTUAL AND INDUSTRIAL PROPERTY (2 hours, first term). Patents, trademarks, copyrights.
Mr. McLeod: Patents
Mr. Gadban: Trademarks
Mr. Amos: Copyrights

389-631A. INTERNATIONAL BUSINESS TRANSACTIONS I (2 hours, first term). An introduction to International Business law designed to familiarize students with the range of laws, national and international, applicable to international business transactions. The course will cover the subject at three different levels: a) private law applicable to international business transactions: Sales, Affreightment, Agency, Insurance, Licensing, Payment, Arbitration, Choice of Law (Unification of Private Law); b) federal regulation, export controls, anti-dumping, export insurance; c) International Law (MFN Standard, Bilateral Trade Agreement, GATT, Selected Commodity Agreements). The focus of the course will be Canadian. However, comparative materials are included and research on problems arising in other legal systems will be encouraged. This course is open to undergraduates.
Professor de Mestral
N.B. SENATE AUTHORIZATION PENDING AT TIME OF PUBLICATION.

389-632B. INTERNATIONAL BUSINESS TRANSACTIONS II (2 hours, second term). An advanced research seminar dealing with: a) Canadian direct investment abroad. What legal problems are Canadian investors facing abroad? What type of protection is available to them against non-commercial risks? This will involve an analysis of the international law rules with respect to confiscation, expropriation and nationalization; b) foreign direct investment in Canada. This part is

devoted to an analysis of the *Foreign Investment Review Act* and the Canada Development Corporation; c) the International settlement of investment disputes between states and nationals of other states. Form of assessment: term paper. Students taking this seminar should have some knowledge of economics, commercial law and international law. The course is open to undergraduate students. *Prerequisite:* International Business Transactions I or its equivalent.
Professor Castel
N.B. SENATE AUTHORIZATION PENDING AT TIME OF PUBLICATION

389-633B INTERNATIONAL COMMERCIAL ARBITRATION (2 hours, second term; not given 1976-77). A seminar dealing with the comparative evaluation of this particular alternative to litigation between parties to international contracts in Canada, the United States and the Common Market, with particular reference to international conventions and other instruments in this field. This is a graduate course open to undergraduate students.

491-425B. INTERNATIONAL CRIMINAL LAW (2 hours, second term). This course is intended to offer to students interested in International Law and Criminal Law, an opportunity to study crimes against the law of nations, war crimes (the Nuremburg trials, the Eichman case), genocide and the way in which states co-operate to fight organized crime, terrorism, hijacking, etc. Attention will be paid to the subject of jurisdiction (crimes committed in foreign countries, at sea, in aircraft, extradition, international judicial assistance) and the recognition and enforcement of foreign criminal sentences. *Prerequisite:* Criminal Law I; *Co-requisite or prerequisite:* Public International Law I.
Professor Williams
N.B. SENATE AUTHORIZATION PENDING AT TIME OF PUBLICATION.

389-620A. INTRODUCTION TO COMPARATIVE LAW (2 hours, first term). Introduction to the comparative method; differences and similarities between the world's legal systems; a detailed study of selected topics. This course is open to undergraduate students in the Faculty as a "Comparative Law Course"
Professor Hahlo

492-419B. JURIMETRICS (2 hours, second term; not given 1976-77). An examination of the use of quantitative methods and symbolic logic in legal analysis, and of the use of computers by lawyers. The emphasis of the seminar will be jurisprudential; what do these new methods of legal analysis tell us about the nature of law?

492-421B. JURISPRUDENCE I (LEGAL PHILOSOPHY) (3 hours, second term). This course will introduce the main schools of jurisprudence and will attempt to acquaint the student with some of the most significant writings, particularly contemporary writings, in legal philosophy. Special attention will be paid to the way in which legal philosophy and the analytic tools it employs can increase understanding of such contemporary issues as civil disobedience and the relationship between law and morality.
To be Announced

492-420A. JURISPRUDENCE II (LEGAL PHILOSOPHY) (2 hours, first term; not given 1976-77). The seminar will be devoted to an intensive study of John Rawls' *A Theory of Justice* It is hoped that close study of this important book will illuminate many of the general problems of legal philosophy.

495-369A. LABOUR LAW I. (3 hours, first term). An introduction to Canadian labour law including collective bargaining, arbitration and industrial relations generally. Emphasis on the Canada Labour Code, the Quebec Labour Code and related statutes.
Mr. Hartt (Section 01)
Mr. Heenan (Section 02)

495-470B. LABOUR LAW II. (2 hours, second term). Special problems in the development of labour law in Quebec and Canada. *Prerequisite:* Labour Law I.
Mr. Finkleman

483-145A. LAND USE PLANNING (B.C.L. or LL.B.) (2 hours, first term). A comparative study of private and public control of land use and development, involving: Master plans, zoning bylaws, subdivision control, urban re-development, expropriation, and regional planning. *Prerequisite:* Property IA or Property I and II.
Professor Jane Glenn

495-482B. LAW AND POVERTY (3 hours, second term). The course will be organized around the following four themes: First, the nature, extent and meaning of poverty in Canada and the implications for anti-poverty planning and poverty law; second, the differential character of the law concerning rich and poor as reflected in case studies in criminal law, consumer law, housing law, welfare law; third, the perceptions of poverty and the poor by law and lawyers, and the perceptions of law and lawyers by the poor; and fourth, the "delivery systems" available for legal services to the poor among topics to be considered here are alternative organizational models for legal services; the role of the law schools both ideologically in terms of curriculum and operationally in terms of legal services for the poor; the roles for government and the professional bar; and the alternative action-oriented strategies for law reform.
Professor Marx

495-487B. LAW OF COMPETITION (2 hours, second term). Legal aspects of competition, with particular reference to restrictive trade practices and the present (and proposed) anti-combines legislation in Canada and elsewhere, with some reference to economic theories about competition; and with some references to the *Foreign Investment Review Act* and other types of direct governmental interven-

tion and regulation of the economy.
Professor Jones
and Mr. Green

491-411D. LEGAL PROBLEMS IN GOVERNMENT CONTROL OF BUSINESS. (2 hours, throughout the year; not given 1976-77). Legal aspects of competition, with particular reference to restrictive trade practices and the present (and proposed) anti-combines legislation in Canada and elsewhere, with some reference to economic theories about competition. Foreign investment Review Act and other types of direct governmental intervention in the economy – for example, price and resource controls, regulation of marketing, utilities, transportation and communication, consumer protection against unfair practices, hazards to health and safety and misleading advertising, Crown corporations, etc. *Prerequisites:* Business Associations I and II.

491-403B. MUNICIPAL LAW (2 hours, second term). Municipal institutions in the Province of Quebec and their constitution and powers. Judicial review of the acts of municipal authorities and officers, in the general context of administrative law. Juridical nullity and other problems. Municipal taxation. Civil responsibility.
Professor Scott

472-140D. OBLIGATIONS I. (B.C.L.) (4 hours, throughout the year). The function of the law of obligations, the concept of obligations, the sources of obligations (the general theory of contractual and legal obligation); the performance of obligations; the general theory of civil responsibility (contractual and extra-contractual); the extinction of obligations.
Professor Crépeau (Section 01)
Professor Haanappel (Section 02)

475-477B. OBLIGATIONS II. (2 hours, second term; not given 1976-77). Problèmes de droit médical et hospitalier; greffes, consentement, legs et dons d'organes, régimes de responsabilité civile; contrat médical et hospitalier; évolution récente de la jurisprudence. *Prerequisite:* Obligations I or Torts I.

475-479B. OBLIGATIONS IV. (MODALITIES AND CAUSES OF EXTINCTION OF OBLIGATIONS) (2 hours, second term.) Modalities; joint and several, conditional and alternative obligations and obligations with a term or penal clause. Extinction: payment, release, confusion, novation (and delegation of payment), compensation, frustration, etc. *Prerequisite:* Obligations I.
Professor Vallée-Ouellet

471-316B. PRIVATE INTERNATIONAL LAW I. (CONFLICT OF LAWS) (3 hours, second term). The function, nature and sources of Private International Law. Conflicts of laws; formulation and development of conflict rules; interpretation of conflict rules (characterization, incidental questions, renvoi, conflits mobiles); operation of conflict rules (application of foreign law, substitution of the laws of the forum). Conflicts of jurisdiction and recognition of foreign judgments.
Professor H. Patrick Glenn (Section 01)
Professor Groffier Atala (Section 02)

473-144A PROPERTY I. (B.C.L.) (3 hours, first term). The concepts of property, ownership and possession, and rights in property; the land titles registration system.
Professor Brierley (Section 01)
(Section 02 to be announced)

483-146D. PROPERTY IA. (LL.B.) (2 hours, throughout the year). Ownership and the doctrine of estates; including interests of husband and wife, uses and the Statute of Uses with an outline of trusts and settlements, concurrent ownership, future interests, and perpetuities, adverse possessions. Commercial land law; easements and profits, restrictive convenants, licences, mortgages, landlord and tenant, fixtures.
Professor Waters (Section 01)
Professor Jane Glenn (Section 02)

473-145B. PROPERTY II. (B.C.L.) (3 hours, second term). The concepts of patrimony and security on property, moveable and immoveable; elements of the land titles registration system; hypothecs, privileges, pledge, with some consideration given to statutory securities on property.
Professor Caron (Section 01)
Professor Vallée-Ouellet (French Section 02)
Mr. Reis (Section 03)

483-149B PROPERTY IIA. (LL.B.) (2 hours, second term). The basic principles of moveable property; ownership and possession; the acquisition and termination of ownership; gifts, bailments, sale of goods, security devices and non-consensual liens.
Professor Jones (Section 01)
Professor Sklar (Section 02)

472-418A. PROPERTY III. (2 hours, first term). A study of the nature and effects of extinctive and positive prescription; the concepts of renunciation, suspension and interruption; review of various extinctive prescription periods under the Civil Code and under certain other Quebec statutes.
Professor Vallée-Ouellet

483-148B. PROPERTY IIIA. (LANDLORD AND TENANT) (LL.B.) (2 hours, second term). An examination of the relationship of landlord and tenant and of current problems affecting residential tenancies. *Prerequisite:* Property IA.
Professor Bradley

491-105B. PUBLIC INTERNATIONAL LAW I (3 hours, second term). The traditional fields of International Law including nature and sources; recognition, territory and acquisition of territory; jurisdiction on the high seas; nationality; diplomatic and consular privileges and immunities; responsibility of states; interpretation of treaties; legal control of force and aspects of the U.N. Charter, special Canadian problems of International Law.
Professor Vlasic

491-406A. PUBLIC INTERNATIONAL LAW II (PROBLEMS OF INTERNATIONAL LAW AND ORGANIZATION). (2 hours, first term; not given 1976-77). An analytical examination of the Charter of the United Nations and a study of the development of international law and organization by and through the various organs of the United Nations and of the specialized agencies *Prerequisite:* Public International Law I.

492-438B. PUBLIC INTERNATIONAL LAW III (LAW OF THE SEA). (2 hours, second term). This course will deal with the main rules governing the regime of the high seas, nationality of ships; territorial waters; fishing control zones; pollution control zones; the exploitation of the continental shelf and the ocean seabed; special legal problems of jurisdiction in the Arctic; the Geneva Conventions of 1958 and developments since that date dealing with all phases of high seas and coastal waters questions; new threats to the oceanic environment and the legal and administrative consequences; the role of the United Nations and other agencies; special bilateral relations between Canada and the United States, Canada and France; special Canadian fisheries control experience; the emergence of a new law of the sea; international and inter-oceanic canals and seaways with particular reference to the St. Lawrence Seaway *Prerequisite.* Public International Law I.

Professor de Mestral

491-404A. PUBLIC INTERNATIONAL LAW IV. (INTERNATIONAL LAW OF HUMAN RIGHTS) (2 hours, first term). The International protection of human rights, particularly by the United Nations, its Specialized Agencies and the Council of Europe. Topics covered will include the Charter of the United Nations, the Universal Declaration of Human Rights, the two convenants and other human rights treaties, humanitarian intervention, diplomatic protection of foreigners, the prevention of discrimination and the protection of minorities, freedom of information, the status of women, self-determination, implementation, etc. There will be a written examination.

Professor Humphrey

491-405B. PUBLIC INTERNATIONAL LAW V. (INTERNATIONAL LAW OF HUMAN RIGHTS) (2 hours, second term). A seminar covering approximately the same subject matter as Public International Law IV. Students will be expected to lead a discussion in class and to write a term paper on some aspect of human rights. Subjects will be assigned after discussion at the beginning of the course. There are no prerequisites, but students are advised to take the course in the same subject in the first term.

Professor Humphrey

491-408B. PUBLIC INTERNATIONAL LAW VI (FOREIGN POLICY AND THE INTERNATIONAL LEGAL PROCESS: THE MIDDLE EAST AS A CASE STUDY) (2 hours, second term; not given 1976-77). The purpose of the course is to inquire into major problem areas in International Law; to explore the role of International Law; and International Organizations in conflict resolution; to analyse the anatomy of Canadian foreign policy decision making; to train students in lawyering skills and techniques of conflict resolution. The Middle East will be used as a case study in this course.

483-451B. REAL ESTATE TRANSACTIONS (LL.B.) (3 hours, second term). Problems arising out of the vendor and purchaser relationship. The contract of sale in its drafting, interpretation and enforcement; fixtures, recording and land titles systems; mortgages. Particular emphasis will be placed upon the law of Ontario. *Prerequisite:* Property IA.

Professor Foster

482-434A. REMEDIES (2 hours, first term). A study of the various common law remedies available at law and equity — remoteness, measure and mitigation of damages in tort and contract; liquidated, punitive and nominal damages; the incidence of taxation; declaratory judgments, specific performance, and injunction; actions for money had and received, quantum meruit, tracing and following. In 1976-77 the course will particularly emphasize the law on damages. *Prerequisites:* Torts I, Contracts I or Property IA. (Those electing this course are recommended to have taken all three of these subjects.)

Professor Field

483-454B. ROMAN LAW: OWNERSHIP AND POSSESSION (2 hours, second term; not given 1976-77). A study of the concepts of Ownership and Possession in Roman Law and a comparative examination of these topics against the background of civil and common law. After an initial study of the Roman Law, students will submit papers for class discussion. There will be no final examination but both the papers and individual participation in the classes will be assessed for the purposes of grading.

483-455B. ROMAN LAW: SALE (2 hours, second term). The origins and development of the contract of sale will be studied in detail using original source material. The subject will be considered against the background of changing Roman society and within the framework of the growth of the law of contracts. There will be no final examination but students will submit term papers, which, together with individual participation in the classes, will be assessed for the purposes of grading.

Mrs. Maryla Waters

473-253A. SPECIAL CONTRACTS I (B.C.L.) (3 hours, first term). The contract of sale and the distinction between civil and commercial matters. *Prerequisite:* Obligations I.

Mr. Fraiberg (Section 01)
Mr. Taviss (Section 02)

473-254B. SPECIAL CONTRACTS II (B.C.L.) (3 hours, second term). The contracts of lease, employment, construction, deposit, suretyship, loan

and transaction, and the basic principles of insurance. *Prerequisite:* Obligations I
Mr. Fraiberg (Section 01)
Mr. Pourcelet (Section 02)

491-402B. STATUTE LAW (2 hours, second term; not given 1976-77). This course will include study of the legislative process, the statute as a legal instrument, its various classifications, purposes and forms, styles of legislative drafting, codification, delegation of legislative power and subordinate legislation, the process of interpretation, interpretation statutes and rules of construction. The course will include exercises in drafting and annotation.

473-255B. SUCCESSIONS. (B.C.L.) (3 hours, second term). The gratuitous transmission of property by reason of gift, will or legal succession. *Prerequisites.* Obligations I or Property I & II.
Professor Brierley (English Section 01)
Professor Groffier Atala (French Section 02)

491-313D. TAXATION I. (2 hours, throughout the year). The general principles of Canadian Income Tax Law. The emphasis is on Federal, Personal and Corporation Tax with some reference to Quebec Income tax rules.
Professor Caron (French Section 01)
Professor Durnford (English Section 02)
Professor Jones (English Section 03)
Mr. Gauthier (English Section 04)

491-413A. TAXATION II (2 hours, first term). The importance of tax considerations in common commercial transactions, both domestic and international. *Prerequisites:* Taxation I, Special Contracts I and II.
Mr. Donald J. Johnston

493-414A. TAXATION III (ESTATE PLANNING) (2 hours, first term). The course deals with provincial succession duties and gift tax as well as the income tax consequences of death. A critical view is taken of current estate planning techniques such as estate freezes. Particular emphasis will be placed upon those aspects of personal and corporate income tax which are relevant in designing and implementing estate plans. *Prerequisites:* Successions or Trusts and Gifts, and Taxation I.
Mr. Couzin

491-415A. TAXATION IV. (TAX POLICY) (2 hours, first term; not given 1976-77). Public aspects of tax legislation; constitutional problems; federal-provincial agreements; tax sharing and equalization; municipal aspects. Social problems in policy; wealth tax; negative tax and re-distribution of resources. *Prerequisites:* Taxation I.

491-417B. TAXATION V (CORPORATE TAXATION) (2 hours, second term). The course considers, in depth, problems unique to corporations and their shareholders including the small business deduction and refundable taxes; distributions to shareholders; corporate reorganizations and liquidations; and the capital gain and "rollover" implications. *Prerequisites:* Taxation I and Business Associations.
Professor Durnford
Professor Jones
Mr. Pound

491-416B. TAXATION VI. (INTERNATIONAL TAXATION) (2 hours, second term). The course covers the taxation of non-residents with income from employment, business or property in Canada; the taxation of Canadian residents with income from employment, business or property outside Canada; foreign tax credits; and the application and importance of tax treaties. *Prerequisite:* Taxation I.
Mr. Verchère

485-179D. TORTS I. (LL.B.) (3 hours, first term; 2 hours, second term). Basic principles of intentional torts, negligence and liability without fault.
Professor Bissett-Johnson (Section 01)
Professor Williams (Section 02)

483-449D. TRUSTS AND GIFTS I. (LL.B.) (3 hours, first term; 2 hours, second term). The nature of the trust in common law and civil law theory and practice; the various types of trust; the creation, operation, and winding up of trusts; including trustees' duties and powers, and the variation of trusts; breach of trust and the doctrine of tracing. Modern uses of the trust, including income tax, succession duty and estate tax considerations, pension funds, and charitable trusts. Gifts other than by way of trust; including *inter vivos* gifts and donations *mortis causa;* essentials of validity. *Prerequisites:* Property IA & IIA.
Professor Waters

496-491A. (THIRD TERM ESSAY)

496-492B. (FOURTH TERM ESSAY)

496-497D. (SECOND YEAR ESSAY)

496-493A. (FIFTH TERM ESSAY)

496-494B. (SIXTH TERM ESSAY)

496-498D. (THIRD YEAR ESSAY)

496-495A. (SEVENTH TERM ESSAY)

496-496B. (EIGHTH TERM ESSAY)

496-499D. (FOURTH YEAR ESSAY)

Students electing an essay must exercise great care in selecting the appropriate course number. The appropriate number will depend upon the term or year in which the essay is being written.

Each term a post-first-year candidate may write a substantial essay on a subject, or a number of shorter articles or notes on one or more subjects meeting the approval of the Dean or his delegate, and of the member or members of Faculty to be responsible for supervision and grading. It is a condition of the elective that approval be obtained not later than the end of the first week of term (Regulation 11). In exceptional cases, where the subject-matter calls for a really substantial essay, special

permission may be granted by the Dean, or his delegate, to spread the writing of an essay over two terms in one academic year; in such event it shall be deemed to constitute two electives and shall carry the weight of grading as such, and no other essays may be elected by such candidates that year. A one term elective is worth two credits; a two term elective four credits.

496-046A, 047B LEGAL CLINIC. Candidates may elect, with the permission of the Dean or his delegate, to work for credit in a legal aid clinic provided that such clinic has received the approval of the Dean. Candidates accepted for work in a legal aid clinic by the Attorney Director thereof may be granted the equivalence of two credits per term upon his recommendation. (See Regulations 27 and 48).

Note: The Faculty cannot guarantee that the students who register for this course will be accepted due to the limited number of places.

496-048A, 049B. GROUP ASSISTANTS. See regulations 51 and following.

McGILL LAW JOURNAL

496-001D Editor in Chief	6 credits
496-002D Executive Editor	4 credits
496-003D Managing Editor	4 credits
496-004D Fifteen members of Senior Board (each)	2 credits

MOOT COURT BOARD

495-005D Chairman	4 credits
496-006D Vice-Chairman	3 credits
496-007D Four members of Senior Board (each)	2 credits

476-185D. MOOTING I. The Faculty's Moot Court Programme is organized by the student-run Moot Court Board, under Faculty supervision. In first year each moot is judged by a member of the Board and a member of the Bar.

476-186D. MOOTING II. In the second year compulsory round, the moots are each judged by a member of the Board a member of the Bar and a professor. These are followed by voluntary elimination and final rounds. Inter-Faculty moots are also arranged by the Board with other Law Faculties.

476-187D. TUTORIALS I. This program involves the division of the First year class into small groups for carrying out written and oral assignments under the guidance of members of the professorial staff, together with instructon on Legal Bibliography under the guidance of the Law Librarian.

5 ADMISSION TO THE LEGAL PROFESSION

5.1 QUEBEC

The attention of candidates for the Bar of Quebec and for the Quebec notarial profession is drawn to the special legislation and regulations governing those professional bodies.

Information regarding admission to the Bar may be obtained by applying to the Bar of Quebec, 84 Notre-Dame Street West, Montreal H2Y 1S9. Tel. 845-9253. Information regarding admission to the Notarial profession may be obtained by applying to the Chamber of Notaries, 630 Dorchester Boulevard West, Montreal H3B 1S6, tel. 866-1793.

The attention of candidates is drawn to the Statutes of Quebec, 1974, Chapter 2, sections 21-23:

21. No professional corporation shall issue a permit to a person who does not have a working-knowledge of the French language determined in accordance with the standards established for that purpose by regulation of the Lieutenant-Governor in Council.

Nulle corporation professionelle ne peut délivrer un permis à une personne qui n'a pas une connaissance d'usage de la langue française déterminée suivant les normes établies à cette fin par règlement du lieutenant-gouverneur en conseil.

22. A professional corporation may however issue a temporary permit valid for one year to a person who does not have the working-knowledge of the French language required in accordance with section 21. It shall not renew such a permit except with the authorization of the Lieutenant-Governor in Council, when the public interest requires it.

Une corporation professionnelle peut toutefois délivrer un permis temporaire valable pour une période d'un an à une personne qui n'a pas la connaissance d'usage de la langue française requise suivant l'article 21. Elle ne peut renouveler un tel permis qu'avec l'autorisation du lieutenant-gouverneur en conseil, lorsque l'intérêt public le requiert.

23. A professional corporation may issue, to a Canadian citizen who is a member of a similar corporation of another province and who does not have the working-knowledge of the French language required in accordance with section 21, a restrictive permit which authorizes its holder to practise his profession for the exclusive account of one employer in a function which does not lead him to deal directly with the public.

Une corporation professionnelle peut délivrer à un citoyen canadien, qui est membre d'une semblable corporation d'une autre province et

qui n'a pas la connaissance d'usage de la langue française requise suivant l'article 21 un permis restrictif, qui autorise son détenteur à exercer sa profession exclusivement pour le compte d'un seul employeur dans une fonction ne l'amenant pas à traiter directement avec le public.

Section 21 applies to the issue of a permit to a Canadian Citizen from 1 July 1976 (Section 119 of the above-mentioned legislation).

5.2 ONTARIO

Admission to the Bar in Ontario is under the control of the Law Society of Upper Canada. That Society requires that the applicant for admission be a graduate from an approved law school. The Law Faculty of McGill has been approved by the Society. Graduates with the degree of Bachelor of Laws (LL.B.) are eligible to enter the Bar Admission Course conducted by the Law Society of Upper Canada and to become student members of the Society.

The Bar Admission Course consists of a period of twelve months service under Articles of Clerkship with a member of the practising profession in Ontario followed by a further period of six months of full-time attendance at lectures in Osgoode Hall. Upon successful completion of these courses the candidate may be called to the Bar provided he meets the other requirements of the Ontario Bar. The foregoing requirements are at present under review.

Candidates intending to seek admission to the Faculty should first seek detailed information on the above from the Law Society of Upper Canada, Kenneth Jarvis, Q.C., Secretary, Osgoode Hall, Toronto M5H 2N6, Ontario.

In general it is expected that the governing bodies of the legal professions in most of the common law provinces will treat the LL.B. degree of McGill University in the same way as they treat an LL.B. degree from any of the Ontario common law schools. Students who have specific inquiries about any particular province should address them to the governing body of the profession in the province concerned.

Candidates for the Bachelor of Laws Degree (LL.B.) and seeking entrance to the Bar Admission program of any of the Common Law provinces must satisfy the regulations of the particular Common Law province to the Bar admission course or program to which entrance is sought. The attention of candidates is drawn to the pre-law requirements of the Bars of the various provinces. In particular, the Law Society of Upper Canada requires an additional pre-law university year for those holding CEGEP diplomas. Moreover, all such regulations are subject to amendment.

6 GRADUATE STUDIES IN LAW

6.1 REGULATIONS

DEGREES

The higher degrees in Law are the M.C.L. (Master of Civil Law), the LL.M. (Master of Laws) and the D.C.L. (Doctor of Civil Law), as offered by the Institute of Air and Space Law and the Institute of Comparative Law and are granted by the Faculty of Graduate Studies and Research.

All graduate students in Law except those registered in the Institute of Air and Space Law, come under the direction of the Institute of Comparative Law.

GENERAL REQUIREMENTS FOR THE M.C.L. or LL.M. DEGREE

Candidates for admission to M.C.L. or LL.M. programs must hold the degree of B.C.L., with at least second class honours, from McGill University, or its equivalent from another recognized university, and satisfy the linguistic and other requirements of the Institute of his study. A candidate must complete the courses prescribed by the Institute, including cognate courses in other departments of study, submit an acceptable thesis and, if required by the Institute, undergo an oral examination designed to test the general knowledge of the field of the research studies.

The requirements for the degree may be completed, by well-qualified and capable students, within one calendar year, but if all the degree requirements have not been completed within this time and additional full academic session in residence is necessary.

In certain cases a transfer of candidacy from the M.C.L. or the LL.M. to candidacy for the D.C.L. may be permitted at the end of the year in residence. Such transfer is open only to a student who shows considerable promise and upon the recommendation of the Institute. A student so transferred will not be required to prepare a master's thesis but must spend at least one further year in residence at McGill.

See the general regulations of the Faculty of Graduate Studies and Research on requirements for Master's degree.

N.B.

In exceptional circumstances the Executive Committee of the Faculty of Graduate Studies and Research may grant an exemption from the requirement of a second residential year at McGill to a candidate who has failed to complete all the requirements for the master's degree within one year.

GENERAL REQUIREMENTS FOR THE D.C.L. DEGREE

The program of each department of study consists of a minimum of three years' work from the first registration of the candidate of which at least two years must be spent in full-time resident study at McGill. Only an applicant of proven legal scholarship of high merit will be admitted to candidacy for this degree and normally a candidate should be the holder of both a general degree and a law degree. In suitable cases the holder of the M.C.L. or LL.M. degree of McGill (or its equivalent) may be considered as having satisfied the first year of the Institute's doctoral program. An applicant must satisfy the linguistic and other requirements of the Institute of his study and, as a rule, the Institute will not permit a candidate who is not the holder of an appropriate master's degree, or its equivalent, to register directly for the D.C.L. but require him to register for the M.C.L. or LL.M. A candidate for the M.C.L. or LL.M. degree of McGill, who, upon the completion of his first year of resident study, shows considerable promise may, upon the recommendation of the Institute of his study, be permitted to proceed to the second year of the D.C.L. program without being required to submit a master's thesis.

At a stage in the program of his studies as determined by the Institute in which he is registered, a candidate may be required to pass an oral examination, the purpose of which is to test his general knowledge of the field of his research studies. Every candidate will be required to defend his thesis before a jury appointed by the Faculty of Graduate Studies and Research and consisting of no fewer than five adjudicators, including at least two who are not members of the Faculty of Law. To qualify for the degree the thesis submitted must be in a form suitable for publication and constitute a significant contribution to legal knowledge, evidencing in concept and execution the original work of the candidate.

Insofar as not varied by the above, the rules and regulations of the Faculty of Graduate Studies and Research apply in all matters pertaining to candidature for a degree.

6.2 *INSTITUTE OF AIR AND SPACE LAW*

Director — Dr. Nicolas M. Matte, OC, Q.C.
Teaching Staff — See Section 1.6

PURPOSE OF THE INSTITUTE

The Institute of Air and Space Law operates within the Faculty of Law. It provides facilities for advanced study and research in Air and Space Law and related problems of International Law for highly qualified law graduates and others with appropriate qualifications.

DIPLOMAS AND DEGREES

The Institute of Air and Space Law offers a Diploma in Air and Space Law, and the degrees of Master of Laws (LL.M.) and Doctor of Civil Law (D.C.L.)

REQUIREMENTS FOR THE DIPLOMA IN AIR AND SPACE LAW

Applicants for admission must hold a law degree of high standing from an approved law school in any part of the world, or must have an equivalent professional standing. Working competence in the English language is required but examinations and other written work may be presented in English or French. All candidates must provide evidence of the subjects covered in their prior law studies and of their scholastic or professional standing, together with two references.

A candidate who satisfies the residence requirements of one academic session and who passes the prescribed examinations with an overall average grade of at least 65% will be awarded the Diploma in Air and Space Law.

COURSES

The prescribed courses are:

387-611D PUBLIC INTERNATIONAL AIR LAW
387-612D PRIVATE INTERNATIONAL AIR LAW
387-613D GOVERNMENT REGULATION OF AIR TRANSPORT
387-614D SPACE LAW
387-615D ECONOMICS OF AIR TRANSPORT
387-616D INTRODUCTION TO CIVIL AND COMMON LAW
387-617D TERM PAPER

The Director may require additional courses of particular candidates.

REQUIREMENTS FOR THE DEGREE OF MASTER OF LAWS

A working competence in the English language is required but examinations and written work including theses may be presented in either French or English. All candidates must provide evidence of the subjects covered in their prior law studies and of their scholastic or professional standing, together with two references.

The prescribed courses are as those set out as required for the Diploma, but in addition the candidate must present an acceptable thesis on a subject approved by the Director. In order to be allowed to submit a thesis, a candidate must have obtained a mark of at least 65% in each of the courses or seminars for which he is registered. No candidate may receive the Diploma and the Master's degree for the same course of studies. A candidate who has already received the Diploma in Air and Space Law may be accepted as a candidate for the Master's degree, but he will be required to register for one

additional academic session, and he may also be required to undertake additional course work beyond the course work already performed for the Diploma. For the General Requirements, see Section 6.1, third paragraph.

REQUIREMENTS FOR THE DEGREE OF DOCTOR OF CIVIL LAW

Candidates for the degree of Doctor of Civil Law must hold the degree of B.C.L. or LL.B. from McGill University or its equivalent from another recognized university. As a rule a candidate who does not already hold a master's degree will be required to complete the master's degree before being accepted for the doctoral program. A candidate who has obtained the master's degree or its equivalent from another university will, as a rule, be required to complete the courses prescribed for the first year of the master's degree. If his performance is not of sufficiently high standard to justify admission to the doctoral program, he will not be permitted to proceed any further, but may be permitted to submit a master's thesis to qualify for the master's degree. If his performance is of sufficiently high standard, he may be permitted to proceed to the second year of the doctoral program without being required to submit a master's thesis.

The degree of Doctor of Civil Law is predominantly a research degree, and will be awarded on the basis of a thesis that represents an original contribution to the development of legal science. The thesis may be presented in English or French. All prospective candidates must provide evidence of the subjects covered in their prior law studies and of their scholastic and professional standing, together with two suitable references. The degree will be awarded, at the earliest, after the completion of three years from the first postgraduate registration of the candidate at McGill University. In the case of a candidate who holds the M.C.L. or LL.M. degree of McGill or its equivalent from another university, two years of resident study beyond the master's degree are required but may be reduced to one year with the approval of the Executive Committee of the Faculty of Graduate Studies and Research on the recommendation of the Graduate Studies Committee of the Faculty of Law. In general, this non-resident year should be spent at another university or similar institution.

6.3 *INSTITUTE OF COMPARATIVE LAW*

Director
— Professor Paul-A. Crépeau, Q.C.
Assistant to the Director
— Professor Ethel Groffier Atala
Teaching Staff
— See Section 1.7

PURPOSES OF THE INSTITUTE

The Institute of Comparative Law operates within the Faculty of Law. As a centre of comparative legal studies, the Institute provides facilities for graduate work, advanced studies and research for highly qualified law graduates in certain areas of comparative Public and Private Law. It also serves as the administrative unit within the Faculty of Graduate Studies, for research and graduate work in other fields as well, namely Public Law, Criminal Law.

The Quebec Ministry of Education has recognized the Institute as a research Centre in Private and Comparative Law (Centre de Droit privé et comparé). The financial assistance provided enables the Centre, within the context of inter-university research, to promote the study and publications relating to, in particular, Private Law and International Commercial Law.

DEGREES

The Institute of Comparative Law offers the degrees of Master of Civil Law (M.C.L.), of Master of Laws (LL.M.), and of Doctor of Civil Law (D.C.L.).

REQUIREMENTS FOR THE DEGREES OF MASTER OF CIVIL LAW AND MASTER OF LAWS

An adequate working knowledge of the English and French languages is required from all applicants. Applicants who wish to pursue studies which in the opinion of the Director require knowledge of a language other than English or French must possess adequate working knowledge of that language.

All applicants must provide evidence of the subjects covered in their prior law studies, of their scholastic or professional standing, and of their linguistic proficiency in English and French, together with not less than two references. For the General Requirements, see Section 6.1, third paragraph.

COURSES

389-650A COMPARATIVE CIVIL LIABILITY (2 hours, first term). A comparative study of selected contemporary problems in the field of civil responsibility. Areas of concern include: economic loss, privacy, mental suffering, prenatal injury, and the role of strict liability.
Professor H.P. Glenn

389-630A COMPARATIVE COMPANY LAW AND THE MULTINATIONAL COMPANY: LAW AND PRACTICE (2 hours, first term). A comparative evaluation of Anglo-American and Continental company law systems — the harmonization of company laws within the European Common Market and the "European Company" — international and multinational companies — structure and management of the multinational company — government control of the multinational company — international controls

and the multinational company— anti-monopoly legislation and the multinational company — the Canadian experience. This course is open to students in the Faculty of Management.
Professor Hahlo

389-670B COMPARATIVE AND INTERNATIONAL PROTECTION OF MINORITIES' RIGHTS. (2 hours, second term). A seminar adopting an international and comparative law approach to the study of the protection of racial, religious and linguistic minorities; definition of concept; early experiments and the experience of the League of Nations; the United Nations with particular reference to its Sub-Commission on the Prevention of Discrimination and the protection of Minorities; representative national legal institutions including those of Belgium, Switzerland, Finland, Yugoslavia, Czechoslovakia, the Soviet Union and Canada. Each participant will be expected to lead a discussion on an appropriate subject on which an essay will also be required. There will be no written examination.
Professor Humphrey

N.B. SENATE AUTHORIZATION PENDING AT TIME OF PUBLICATION.

389-651B COMPARATIVE MEDICAL LAW. (2 hours, second term). A comparative study of selected contemporary medico-legal problems including civil and criminal liability of doctors and hospitals, consent, medical and hospital contracts, emergency services, organ transplants, death, euthanesia, abortion, sex reassignment, experimentation and medical ethics.
Professor Crépeau
Professor Kouri

N.B. SENATE AUTHORIZATION PENDING AT TIME OF PUBLICATION.

389-634A COMPARATIVE PRIVATE INTERNATIONAL LAW. (2 hours, first term). The comparative study of basic rules of conflict of laws and enforcement of foreign judgments in the civil and common law systems, with particular reference to international and inter-regional unification efforts.
Professor Groffier Atala

N.B. SENATE AUTHORIZATION PENDING AT TIME OF PUBLICATION.

389-636A EUROPEAN COMMUNITY LAW I. (2 hours, first term). An introduction to the study of European Community Law and legal institutions, with particular reference to the Treaty of Rome and subsequent instruments.
Professor Lasok
Professor Eliasz

N.B. SENATE AUTHORIZATION PENDING AT TIME OF PUBLICATION.

389-637B EUROPEAN COMMUNITY LAW II (2 hours, second term). A study of selected topics in European Community Law, particularly European Commercial Transactions. It will also examine the legal implications of Canadian participation in the European Economic Community.
Professor Lasok
Professor Eliasz
N.B. SENATE AUTHORIZATION PENDING AT TIME OF PUBLICATION.

389-631A INTERNATIONAL BUSINESS TRANSACTIONS I (2 hours, first term). An introduction to International Business law designed to familiarize students with the range of laws, national and international, applicable to international business transactions. The course will cover the subject at three different levels: a) private law applicable to international business transactions: Sales, Affreightment, Agency, Insurance, Licensing, Payment, Arbitration, Choice of Law (Unification of Private Law); b) federal regulation, export controls, anti-dumping, export insurance; c) International Law (MFN Standard, Bilateral Trade Agreement, GATT, Selected Commodity Agreements). The focus of the course will be Canadian. However, comparative materials are included and research on problems arising in other legal systems will be encouraged.
Professor de Mestral
N.B. SENATE AUTHORIZATION PENDING AT TIME OF PUBLICATION.

389-632B INTERNATIONAL BUSINESS TRANSACTIONS II (2 hours, second term). An advanced research seminar dealing with: a) Canadian direct investment abroad. What legal problems are Canadian investors facing abroad? What type of protection is available to them against non-commercial risks? This will involve an analysis of the international law rules with respect to confiscation, expropriation and nationalization; b) foreign direct investment in Canada. This part is devoted to an analysis of the *Foreign Investment Review Act* and the Canada Development Corporation; c) the International settlement of investment disputes between states and nationals of other states. Form of examination: term paper. Students taking this seminar should have some knowledge of economics, commercial law and international law.
Professor Castel
N.B. SENATE AUTHORIZATION PENDING AT TIME OF PUBLICATION

INTERNATIONAL COMMERCIAL ARBITRATION (2 hours, second term) (not given in 1976-77) A seminar dealing with the comparative evaluation of this particular alternative to litigation between parties to international contracts in Canada, the United States and the Common Market, with particular reference to international conventions and other instruments in this field.

492-436A INTRODUCTION TO COMPARATIVE LAW (2 hours, first term) Introduction to the comparative method; differences and similarities between the world's legal systems; and detailed study of selected topics.
Professor Hahlo

Note: Some or all of the courses and seminars sponsored by the Institute which are open to undergraduate students may be limited in their enrolment on the basis of restricted numbers or student record. A number of the courses listed above may be open to undergraduate students in the Faculty of Law and qualify as a "Comparative Law Course" within its Regulations.

There is no uniform program of studies. Each candidate follows a program of studies, determined by the Director, which, in as far as possible, is fashioned to meet his particular needs as indicated by his prior legal experience and aspirations.

As a rule a candidate must take in each of the two terms of the academic year a minimum of three courses. Moreover, a candidate with a civil law background will normally be required to select at least one undergraduate course from the common law program, while a candidate with a common law background will normally be required to select at least one undergraduate course from the civil law program. The remaining courses may be selected, subject to the Director's approval, from seminars provided by the Institute and from courses forming part of the curriculum for the B.C.L. or LL.B. and in certain cases from courses offered in other faculties.

To complete the requirements for the Master's Degree, a candidate will be required to submit a thesis on a subject approved by the Director. A candidate who has failed to complete his prescribed coursework will not be permitted to proceed to the submission of a thesis.

Examinations, term papers and theses may be written in English or French.

Note: In accordance with the requirement of the Faculty of Graduate Studies a pass standard of 65% must be obtained in each course.

REQUIREMENTS FOR THE DEGREE OF DOCTOR OF CIVIL LAW

Candidates for the degree of Doctor of Civil Law must hold the degree of B.C.L. or LL.B. from McGill University or its equivalent from another university. As a rule, a candidate who does not already hold a master's degree will be required to complete the master's degree before being accepted for the doctoral program. A candidate who has obtained the master's degree from another university will, as a rule, be required to complete the courses prescribed for the first year of the master's degree. If his performance is not of sufficiently high standard to justify admission to the doctoral program, he will not be permitted to proceed any further, but may be permitted to submit a master's thesis to qualify for the master's degree. If his performance is of sufficiently high standard, he may be permitted to proceed to the second year of the doctoral program without being required to submit a master's thesis.

The degree of Doctor of Civil Law is predominantly a research degree, and will be awarded on the basis of a thesis that represents an original contribution to the development of legal science. The thesis may be presented in English or French. All prospective candidates must provide evidence of the subjects covered in their prior law studies and of their scholastic and professional standing, together with two references. The degree will be awarded, at the earliest, after the completion of three years from the first postgraduate registration of the candidate at McGill University. In the case of a candidate who holds the M.C.L. or LL.M. degree of McGill or its equivalent from another university, two years of resident study beyond the master's degree are required but may be reduced to one year with the approval of the Executive Committee of the Faculty of Graduate Studies and Research on the recommendation of the Graduate Studies Committee of the Faculty of Law. In general, this non-resident year should be spent, under appropriate supervision, at another university or similar institution.

7 LIBRARY

The Law Library of the University, located in new Chancellor Day hall, contains at present a valuable collection of almost 100,000 volumes. It includes virtually all Canadian works, and the principal law reports of the United Kingdom and France, as well as a selection of reports from the United States, Commonwealth countries such as Australia and New Zealand and Civil Law jurisdictions such as Belgium and Germany. The generous gifts from graduates and friends of the Law Faculty contribute significantly to its maintenance as a first class collection.

The Wainwright Collection, comprising the personal library of the French legal historian Olivier Martin, is a particularly fine collection of early editions relating to French law.

The Law Library is intended primarily for the use of professors of this Faculty and students registered for courses given in it or in the Institute of Air and Space Law or in the Institute of Comparative Law. Permission for use by other persons desiring to avail themselves of this Library's facilities will depend on the space available and the demands being placed on the Library's resources at the time. Attention is drawn to the necessity for persons not registered at McGill University to register and pay a fee to the University where extensive use of the Library is authorized.

The great value of the Law Library to students and to the profession is self-evident. For these reasons the Faculty expects the full cooperation of all in maintaining the integrity of the Library and in preventing damage to books or their unlawful removal.

Law students also have access to all other collections within the University Library system, in particular the McLennan Library, which has the main Social Sciences and Humanities collection.

8 McGILL LAW JOURNAL

The McGill Law Journal is a professional journal published by students of the Faculty of Law of McGill University. Its purpose is to promote the study of the law in Canada and to help in the understanding of the Civil Law and Common Law systems which exist side by side in this country.

9 MOOT COURT BOARD

The Moot Court Board is composed of post First year students of the Faculty of Law and supervises the Faculty's moot court program. Ability and capacity determine the selection of members.

10 SCHOLARSHIPS, PRIZES AND LOAN FUNDS

10.1 SCHOLARSHIPS AND BURSARIES

EDWIN BOTSFORD BUSTEED SCHOLARSHIP. — Founded by the will of the late Mrs. Busteed in memory of her husband, Edwin Botsford Busteed, K.C., B.A., B.C.L., this Scholarship will be awarded to an applicant, chosen by the Faculty, who desires to carry out graduate research on some subject connected with the law of Quebec and approved by the Faculty. The value of the scholarship is approximately $1200 and can be used to supplement funds for graduate studies already received from other sources. Candidates shall make application for this Scholarship to the Dean.

HAROLD G. FOX EDUCATION FUND BURSARIES. — Value approximately $250. Established by donations from the Harold G. Fox Education Fund. To be awarded to needy law students in good standing. Application should be made to the Student Aid Office.

MAURICE GOLDENBERG MEMORIAL SCHOLARSHIP — Value $225, in Government, Constitutional Law, or Public Administration, established by Sen. H. Carl Goldenberg, Q.C., in memory of his father, the late Maurice Goldenberg. Awarded by the University Scholarships Committee to the best candidate amongst those nominated by the Faculties of Arts and Law.

CHIEF JUSTICE R.A.E. GREENSHIELDS MEMORIAL SCHOLARSHIPS. — Three scholarships covering tuition fees bequeathed by the late Mrs. R.A.E. Greenshields in memory of her husband, the late Chief Justice Greenshields, D.C.L., LL.D., for many years professor of Criminal Law and Dean of the Faculty of Law. Awarded to students entering the Faculty of Law and renewable in each of the two upper years leading to the Bachelor of Civil Law degree, if satisfactory conduct, and at least a high Second Class standing are maintained, or for other reasons at the discretion of the Faculty. Candidates must satisfy the regular requirements for admission to the Faculty, must have a standing of at least high Second Class, and preferably First Class at the university or institution which they previously attended, and must furnish evidence of the need for financial assistance to enable them to study law. Fluency in both English and French is not essential, but preference is normally given to applicants with a good working knowledge of both languages. Apply to the Faculty Admissions Office.

H.E. HERSCHORN FUND. — The Student Aid Office may award a bursary from the interest of this fund to a deserving student in the third or any subsequent year of his or her program leading to the B.Sc., B.A., M.D., C.M., B.C.L., or LL.B. degree.

EUGENE LAFLEUR SCHOLARSHIP. — This scholarship in the amount of $1,000 presented by the law firm of Messrs. Laing, Weldon, Courtois, Clarkson, Parsons, Gonthier & Tétrault in memory of its founder, will be awarded annually to a student entering the year in which he expects to obtain his B.C.L. degree (whether the student is pursuing a purely B.C.L. program or is taking the National Program). Selection will be made by the Faculty on the principal ground of academic excellence.

MACDONALD TRAVELLING SCHOLARSHIP. — Founded by the will of the late Sir William Macdonald "for the purpose of enabling English-speaking Law students to take a course of studies in France," the testator "deeming it of great importance that the English-speaking members of the legal profession should be proficient in the French language." The value of the scholarship is approximately $4,000. The scholar selected is required to pursue a year's study in the Law Faculty of a French university approved, in each case, by the Faculty. The award is made at the discretion of the Faculty to a student of the graduating class proceeding to the Bar, who has obtained first or high second class honours in the final examination, and who would be unable without such financial help to spend a year in France. The Faculty interprets the will of the late Sir William MacDonald as intending that the Scholarship be awarded only to students preparing for the legal profession in the Province of Quebec. Under the present regulations the Scholarship must be used in the year in which it is awarded. Candidates

should make application for this Scholarship to the Dean.

McGILL LAW GRADUATES ASSOCIATION SCHOLARSHIPS. — The McGill Law Graduates Association offers two scholarships, one covering tuition fees for a student entering Second year and the other for a student entering Third year. Selection is made by the Faculty of Law in conjunction with a representative of the McGill Law Graduates Association, with broad discretion on the basis of need as well as academic and other merit. Apply to the Faculty Admissions Office.

NATIONAL PROGRAMME SCHOLARSHIPS. — Six entrance scholarships of $2,500 each, awarded to candidates with distinguished records in pre-law studies, registering for either the B.C.L. or LL.B. degree and with the intention of proceeding to the second degree in the National Programme at McGill. Tenable for four years of the National Programme if candidate maintains distinguished academic standing.

CHARLES ALBERT NUTTING BURSARY. — Value $250, resulting from a donation made in 1930 by Miss Adelaide Nutting, M.A., R.N., in memory of her brother, Charles Albert Nutting, K.C., B.C.L. 1872. Awarded by the Student Aid Office to needy law students in good standing.

THOMAS ALEXANDER ROWAT SCHOLARSHIP. — Value $250, founded by Mr. Donald McKenzie Rowat, N.P., in memory of his brother, Lieutenant Thomas Alexander Rowat, B.C.L., who was killed in action at Lens, France, on June 28, 1917. Awarded for proficiency in French and in the old French law, on conditions set by the Faculty.

THOMAS SHEARER STEWART TRAVELLING FELLOWSHIP. — Established in 1967 by the family of the late Thomas Shearer Stewart, Q.C., a graduate of the Faculty of Law class of 1908. The Fellowship, valued at not less than $3,000*, is to be awarded annually or as often as the University considers advisable, to a recent graduate of the Faculty of Law designated by the Dean of the Faculty, preference being given to a graduate who is a Canadian Citizen intending to reside in Canada upon completion of his studies. The Fellowship is to be used for a graduate to follow a program of studies in Law at a university approved by the Dean of the Faculty, other than at a university in Quebec. Candidates shall make application for this Fellowship to the Dean.

MR. & MRS. SAUL TARNOFSKY AWARD. — $100 donated by Mr. & Mrs. Saul Tarnofsky, and awarded by the Faculty to a first-year student in financial need. Apply to the Faculty Admissions Office.

WAINWRIGHT SCHOLARSHIPS. — Established by a bequest from the estate of the late Arnold Wainwright, Q.C., for many years a lecturer in the Faculty of Law and a distinguished lawyer of the Montreal Bar. Two entrance scholarships of $1,500 each for 3 years and $2,000 each for the fourth year. Awarded to undergraduates of promise having distinguished scholastic records registered for the B.C.L. or LL.B. degree and proceeding to the National Program. Tenable for four years if candidates maintain distinguished academic standing. In addition, two scholarships of $2,000 each are available for students who have obtained their first law degree and are entering the last year of the National Program. Wainwright Scholars who show no financial need will be awarded the nominal sum of $100, the balance of monies to be allocated as Wainwright Bursaries to meritorious students with need. Apply to the Faculty Admissions Office.

***It is the policy of the Trustees of the Wainwright Fund to entertain applications for supplements to the Thomas Shearer Stewart Travelling Fellowship from candidates showing an interest in the possibility of a career in law teaching.**

10.2 BURSARIES, PRIZES AND LOAN FUNDS IN ALL FACULTIES

A complete list of scholarships and bursaries in the University generally and the regulations governing the various loan funds are given in the *Undergraduate Scholarships and Awards Announcement* which may be obtained at the Registrar's Office.

10.3 PRIZES

ALEXANDER SCHOLARSHIP. — $100, bequeathed in 1950 by the late Maurice Alexander, C.M.G., K.C., of London, England, as a token of esteem for the late Sir Charles Peers Davidson, former Professor of Criminal Law at McGill. Awarded by the Faculty.

HYMAN BAKER, Q.C. PRIZE. — $100, established by the family of Hyman Baker, Q.C. to commemorate his seventieth birthday. Awarded to the student obtaining the highest standing in Bankruptcy Law.

I. BALLON MEMORIAL MEDAL. — Established in 1955 by Mrs. I. Ballon in memory of her husband, the late Isidore Ballon, B.A. 1907, B.C.L. 1908, and awarded to the most outstanding student on the Board of Editors of the *McGill Law Journal*.

CANADA PERMANENT PRIZE. — An annual prize valued at $100, established in 1966 by Canada Permanent, awarded to the student who receives the highest standing in the group of courses comprising Wills, Successions, Marriage Covenants and Gifts.

CARSWELL PRIZES. — A book prize of $100 established in 1948 by Carswell Company Limited awarded to a student in the graduating class. There are two further book prizes of $50 each, established in 1973 by the Company and awarded to a lower year student. These prizes are awarded at the discretion of the Faculty.

PRIX SOUVENIR GEORGE S. CHALLIES — GEORGE S. CHALLIES MEMORIAL AWARD. — Extract from address given by the Hon. Chief Justice Jules Deschênes of the Superior Court to the McGill Law Graduates Association on December 13th, 1973:

Mr. Justice Challies left us prematurely earlier this year and the judges of the Superior Court of the Province of Quebec have thought that they should erect a monument, however small, to his memory. Where then better than at his Alma Mater?

We have, therefore, raised among ourselves the sum of $1,900 which it is our pleasure to donate to McGill University, for the money to be held in trust and the return to be given yearly to a deserving student in the judgment of the Faculty of Law, under the name of "Prix Souvenir George S. Challies — George S. Challies Memorial Award".

JOSEPH COHEN, Q.C. AWARD. — This award of $315 is made to a deserving student selected by the Faculty.

JOHN W. COOK, K.C. PRIZE. — $575, awarded annually to an outstanding member of the graduating class in Law as determined by the Dean and Faculty on the basis of high academic standing throughout the course, participation in Faculty activities and possible postgraduate intentions.

JOHN E. CRANKSHAW PRIZE. — Established by friends of the late John E. Crankshaw, Q.C., formerly lecturer in Criminal Law at McGill, the prize consists of $300 to be applied to Bar fees, advocate's gown and any other needs. Awarded to the student who has the highest standing in Criminal Law subjects at McGill and has passed his final examination for admission to the Bar of the Province of Quebec.

MAX CRESTOHL PRIZE. — $65, established in 1959 under the Will of the late Max Nathan Zion Crestohl, Q.C. Awarded to the student who, in the opinion of the Faculty, has submitted the best written contribution to the *McGill Law Journal.*

JOSEPH DAINOW PRIZE. — $100, established by Professor Dainow, for writing in the area of Civil Law.

HAROLD G. FOX EDUCATION FUND PRIZE. — $100, offered each year commencing 1970-71 for a period of five years, awarded to the student who obtains the highest standing in the course on Intellectual Property.

CHIEF JUSTICE GREENSHIELDS PRIZE IN CRIMINAL LAW. — Value $95, endowed by the late Mrs. Greenshields in 1943 in memory of her husband, the late Chief Justice Robert Alfred Ernest Greenshields, D.C.L., LL.D., for many years professor of Criminal Law and Dean of the Faculty of Law, and awarded to the member of the graduating class in Law having the highest standing in Criminal Law throughout the law program.

H.E. HERSCHORN PRIZE. — $150, established by the late Mr. H.E. Herschorn, N.P., B.A. 1911, B.C.L. 1914, to the highest ranking graduating student who intends to enter the Notarial profession.

"I.M.E." PRIZE IN COMMERCIAL LAW. — $200, to enable a student to purchase law books, established by Mr. George S. McFadden, Q.C., awarded to the member of the graduating class having the highest standing in Commercial Law throughout the program.

LYON WILLIAM JACOBS, Q.C., AWARD. — Value $100. Originally established in 1957 by donations totalling $500, and increased in 1962 to $2,000 by Mr. and Mrs. Alvin B. Jacobs, Mrs. Sybil Jacobs Phillips, Dr. and Mrs. Morris Lieff, and Mr. and Mrs. Newman Biller, in honour of the late Mr. Lyon W. Jacobs, Q.C. Awarded to a Second or Third year Law student who, in the opinion of the Faculty, shows the most progress in his studies and is also in financial need.

JUNIOR BAR ASSOCIATION PRIZE. — A prize of $50 for the student who obtains the highest standing in Civil Procedure in the First year.

DEAN IRA A. MacKAY PRIZE. — $100, established by Mr. R. deWolfe MacKay, Q.C., in memory of his father, formerly Dean of the Faculty of Arts and Science of McGill University, and awarded at the discretion of the Faculty to the student obtaining the highest standing in the field of Torts throughout the program.

CHESTER MACNAGHTEN PRIZES. *See Undergraduate Scholarships and Awards Announcement.*

ADOLPHE MAILHIOT MEMORIAL PRIZE. — A prize of $25, established by Mr. and Mrs. J.N. Mailhiot, of Victoriaville, P.Q., in 1927, to be used for the purchase of law books.

THE PHILIP MEYEROVITCH, Q.C. PRIZE. — $100, established in 1972 by his wife and children, to commemorate his fifty years of practice before the Bar of the Province of Quebec. Awarded to the graduating student obtaining the highest standing in Evidence.

MONTREAL BAR ASSOCIATION PRIZES. — A prize of $200 for the student who obtains the highest standing in Civil Law throughout the law program and $200 for the student who obtains the highest standing in Civil Procedure throughout the law program.

ALEXANDER MORRIS EXHIBITION. — Value $120, founded in memory of the late Hon. Alexander Morris, M.A., D.C.L., fo Toronto, and awarded to the student who obtains the highest standing in the Second year.

LAZARUS PHILLIPS PRIZE. — $200, established by the wife and family of Sen. Lazarus Phillips to commemorate his seventieth birthday. Awarded to the student obtaining the highest standing in the

combined examinations in Company Law and Taxation.

QUEBEC BAR PRIZE. — $100, awarded to the winning team in this Faculty's Moot Court competition.

THE LORD READING SOCIETY OF MONTREAL PRIZE. $150, established in 1952, awarded to the student who obtains the highest standing in the First year.

BENJAMIN ROBINSON MEMORIAL PRIZE. — A prize of $150 established by relatives and friends of the late Honourable Mr. Justice Benjamin Robinson in his memory, to be awarded to the student who obtains the highest standing in the final year of the National Program leading to the degree of Bachelor of Laws (LL.B.).

LOUIS H. ROHRLICK MEMORIAL PRIZE. — A prize of $100, established by associates of the late Louis H. Rohrlick, Q.C., in his memory, to be awarded to the member of the graduating class having the highest standing in Public International law throughout the program.

ELIZABETH TORRANCE GOLD MEDAL. — Founded in 1864 by John Torrance, Esq., prominent Montreal merchant, in memory of his wife. Their son, Frederick William Torrance, of the Bar of the Province, was for many years professor of Roman Law in this Faculty and a judge of the Superior Court. The Medal was first awarded in 1865 to Norman William Trenholme, who became, successively, a professor, and then Dean of this Faculty, a judge of the Superior Court and then of the Queen's Bench, and ultimately acting Chief Justice of the Province. The Medal shares the lustre of the achievements of many other graduates distinguished at the Bar and on the Bench, amongst them the Right Honourable Charles J. Doherty, Hon. M. Justice Pierre-Basile Mignault, Aimé Geoffrion, K.C., and Arnold Wainwright, K.C.

It is awarded to the student who obtains, with the highest standing throughout the B.C.L. Program, his B.C.L. Degree as his first law degree at a spring convocation.

GERALD S. TRITT, Q.C. PRIZE. — $100, established in 1961 by the family and friends of Mr. and Mrs. Tritt and awarded to the student with the highest standing in the Special Contracts course.

WAINWRIGHT ESSAY PRIZE. — A prize of $500 will be awarded for the best written contribution by an undergraduate law student, whether the contribution be an essay or other paper and whether written as an elective or as part of a course requirement, or voluntarily. It will only be awarded if a high standard is achieved.

WILSON AND LAFLEUR (LIMITEE) AWARD. — This award of $100 is made every alternate year to a deserving First year student selected by the Faculty.

No scholarships or prizes will be awarded if, in the opinion of the Faculty, there is no candidate of sufficient merit.

10.4 LOAN FUNDS

The *A. Fleming Loan Fund* was established in 1954 by Mr. A Fleming to aid students in the Faculty of Law. Application should be made to the Student Aid Office.

The *Louis De Zwirek, Q.C. Loan Fund* was established in 1969 by his widow in honour of her late husband from the Estate to aid students in the Faculty of Law. Application should be made to the Student Aid Office.

11 PUBLIC LECTURES

11.1 MEREDITH MEMORIAL LECTURES

In 1949 the Faculty of Law of McGill University began its sponsorship of a series of lectures known as the *Bar Extension Lectures.* These were designed to assist in the promotion of continuing legal education for members of the legal profession in the Montreal area. A variety of topics of current interst both to the members of the Bar and the notarial profession have been offered annually since that time. Since 1961 the lectures have been published as *The Meredith Memorial Lectures* in honour of the late W.C.J. Meredith, Q.C., Dean of the Faculty of Law of McGill University from 1950-1960.

11.2 WAINWRIGHT LECTURES

The *Wainwright Lectures* were established by the Faculty of Law of McGill University in 1973 to honour the memory of the late Arnold Wainwright Q.C.

This eminent Canadian advocate who practised for over fifty years at the Bar of the Province of Quebec, had a long association with legal studies at McGill University. He obtained his Bachelor of Civil Law degree in 1902 and was awarded the Elizabeth Torrance Gold Medal and the Macdonald Travelling Scholarship. In 1909 he joined the teaching staff of the Law Faculty as a part-time Lecturer in Civil Law; in 1921 he was promoted to the rank of Professor. His merits as a teacher of the Civil Law for over twenty-five years were recognized by McGill University in 1934 when it named him, upon his retirement, Emeritus Professor. The degree of Doctor of Civil Law *honoris causa* was conferred upon him by the University in 1963.

The bequest of the residue of his estate to McGill University for the use of the Faculty of Law made possible the founding of undergraduate scholarships in law, the enrichment of the Law Faculty

Library and the inauguration of the *Wainwright Lectures*. These have been organized to promote the scholarly study of law and, in particular, the Civil Law of Quebec, which always remained, throughout his long and distinguished career, the abiding interest of this generous friend and much valued colleague of the McGill Law Faculty.

12 STUDENT ACTIVITIES

12.1 THE LAW UNDERGRADUATES' SOCIETY

The Law Undergraduates' Society is composed of all students in the Law Faculty pursuing either the LL.B. or B.C.L. degree. Through its council composed of the seven class presidents and heads of various groups and societies within the Law Faculty, the Society oversees a number of functions and activities affecting the students of the Law Faculty. Amongst these are included such various undertakings as Social Affairs and Sports, the Association of Women in Law, the Debating Society and many others. The success of these functions and organizations depends fully on active student participation and support, and First year students are strongly encouraged to help with and take part in the carrying out of the various endeavours of the L.U.S.

12.2 CAMPUS LEGAL AID CLINIC

The Campus Legal Aid Clinic is a student run non-credit service for the McGill University community. Law student staff provide legal counselling and information within the limits of the Bar Act. Only post-first year students are eligible. For further information: 392-8918, University Center, 3480 McTavish Street, Room B-46.

13 JOB PLACEMENT

While the Faculty recognizes the importance of student placement, it is impossible at the present time to organize a complete job placement service. Every effort is, however, made to bring all inquiries received from law firms, corporations, government agencies, public interest groups, etc. for qualified students or graduates to the attention of the Director, Student Affairs Office who posts such information prominently within the Faculty.

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Canada H3C 3G1

Faculty of Management

BACHELOR OF COMMERCE

1976/77

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Montreal

The University reserves the right to make changes without prior notice to the information contained in this publication, including the alteration of various fees schedules and the revision or cancellation of particular courses.

Students intending to seek membership in a professional corporation in Quebec are reminded that after July 1, 1976 they will be required to show that they possess a working knowledge of the French language, in conformity with the requirements of the Professional Code (Bill 250) and the Official Language Act (Bill 22).

Faculty of
MANAGEMENT
BACHELOR OF COMMERCE
1976 — 77

Samuel Bronfman Building
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CALENDAR OF DATES FOR SESSION 1976-1977

1976

May 10 to June 18	Summer Session Part 1
May 24	Victoria Day Administrative offices will be closed
June 8 and June 9	Convocations
June 24	St. Jean Baptiste Day Administrative Offices will be closed
July 1	Canada Day Administrative Offices will be closed
July 5 to August 13	Summer Session Part 2
Sept. 6	Labour Day Administrative Offices will be closed
Sept. 7	Registration in all years for Undergraduate Management students
Sept. 13	First day of lectures for all Undergraduate Management students
Sept. 20 to Sept. 24	Change of course period for all Undergraduate Management courses
Sept. 28	Late registration
Oct. 11	Thanksgiving. Lectures cancelled Administrative Offices will be closed
Oct. 15	Deadline for withdrawing (W) from 'A' courses
Nov. 9	Convocation
Nov. 26	Deadline for withdrawing (W) from 'D' courses
Dec. 10	Last day of lectures for fall term
Dec. 13 to Dec. 23	EXAMINATIONS in first term Management courses
Dec. 25 to Jan. 2, 1977 incl	Administrative offices closed

1977

Jan. 3	Administrative offices re-open
Jan. 14	Second term registration for new students
Jan. 17	First day of lectures for all Management Students for Spring term
Jan. 24 to Jan. 28	Change of course period for 'B' courses in Management
Feb. 11 and 12	Midterm weekend holiday (Montreal campus) Lectures cancelled
Feb. 18	Last day to withdraw (W) from 'B' courses in Management
Apr. 8 to Apr. 11	Easter. Administrative offices will be closed from 5:00 p.m., Apr. 7 until 9:00 a.m., Apr. 12. Lectures cancelled
Apr. 15	Last day of lectures for 'B' term and 'D' courses in Management
Apr. 18 to May 6	EXAMINATIONS in Management courses
June 7 and 8	Convocations

1 STAFF

ADMINISTRATIVE OFFICERS

ROBERT E. BELL, C.C., B.A., M.A. (U.B.C.), Ph.D. (McG.), D.Sc. (U.N.B., Laval), LL.D. (Tor.), F.R.S., F.R.S.C. **Principal and Vice-Chancellor**

EIGIL PEDERSEN, B.A. (Sir G. Wms.), M.A. (McG.), D.Ed. (Harv.) **Vice-Principal (Academic)**

LEO YAFFE, B.Sc., M.Sc. (Man.), Ph.D. (McG.), F.C.I.C., F.A.P.S., F.R.S.C.
Vice-Principal (Administration)

ALLAN C. McCOLL, D.F.C., B.Com. (McG.), C.A.
Vice-Principal (Finance)

WALTER F. HITSCHFELD, B.A.Sc. (Tor.) Ph.D. (McG.), F.R.Met.S. **Vice-Principal (Research)**

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Dean

A.D. TEITLEBAUM, B.Sc., M.Sc., Ph.D. (McG.)
Associate Dean

COLIN M. McDOUGALL, D.S.O., B.A. (McG.)
Secretary-General

JEAN-PAUL SCHULLER, B.A. (Ott.) **Registrar**

ALBERT F. BANVILLE **Assistant to the Dean**

LESLEY RICHARDSON
Undergraduate Program Adviser

HELEN DUGGAN
Undergraduate Program Secretary

MEMBERS OF FACULTY

L.R. AMEY, B.Ec. (Adelaide), B.A., Ph.D. (Nott.)
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Associate Director, Continuing Education

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Associate Professor in Policy, Behavioural Science

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Professor in Accounting

G. LEROY, Ingenieur (Insa), M.Sc. (Stan.), Ph.D. (Calif.)
Visiting Professor in Int. Business

R. J. LOULOU, M.Sc., Ph.D. (Calif.)
Associate Professor in Quant. Methods

A. R. MARSHALL, B.Com.(Dal.), M.A., M.B.A. (Wis.), C.A.
Associate Professor in Accounting

H. MINTZBERG, B.Eng, B.A. (Sir G. Wms.), S.M., Ph.D. (M.I.T.)
Associate Professor in Management Policy

R. N. MORRISON, B.Eng. (McG.), M.A. (Oxon)
Professor of Economics

W. H. PUGSLEY, B. Com., M.B.A. (Harv.), Ph.D. (McG.) **Professor in Management Policy**

C. H. RORKE, B.Com. (Qu.), M.B.A. (Calif.), M.S. (Roch.)
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P. J. SANDIFORD, B.A., M.A., Ph.D. (Tor.)
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S. J. SHAPIRO, A.B. (Harv.), M.B.A., Ph.D. (Penn.)
Dean, Professor in Marketing

E. SMITH, B.Eng., M.B.A. (McG.)
Visiting Lecturer in Computers and Systems

J. G. SMITH, B.A. (Nott.), M.A., Ph.D. (Ohio State)
Professor in Economics

A. D. TEITLEBAUM, B.Sc., M.Sc., Ph.D. (McG.)
Associate Dean, Associate Professor in Quant. Methods

G. A. WHITMORE, B.Sc. (Man.), M.Sc., Ph.D. (Minn.)
Professor in Quant. Methods, Finance

H. D. WOODS, B.A. (U.N.B.), M.A., (McG.), LL.D. (U.N.B.)
Professor in Industrial Relations

R. W. WRIGHT, B.A., M.B.A. (Dart.), D.B.A. (Indiana)
Associate Professor in International Business

M. YALOVSKY, B.Sc., M.Sc. (McG.)
Assistant Professor in Quant. Methods

PART-TIME LECTURERS IN MANAGEMENT

G. AUDET, B.A., L.L.L. (Laval)

D. BARRINGTON, B. Com., M.B.A. (Harv.), C.A.

J. BATES, B.Sc. (Lond.), B Com. (Sir G. Wms.)

C. E. BEIGIE, B.A. (Muskingum College, Ohio), M.A. (M.I.T.)

P. CUNNINGHAM

G. DAVIES, B. Sc. (Sir G. Wms.) M.B.A. (McG.)

S. G. FREEDMAN

A. FRAYNE, B.Sc. (Lond.), M.B.A. (McG.), C.A.

D. GOBEIL

B. ISENBERG

W. J. KALAHER, B.A. (Kent State)

I. KRUPKA, B.A. (Qu.)

M. MILLER

W. W. OGILVIE, C.D., B.A. (Bishop's), C.F.A.

G. OLIVER, B.Com.

R. RABINOVITCH

D. N. S. ROBERTSON, B.A. (Qu.) B. Paed., M.Ed. (Tor.)

L. SILVERFINE, B.Sc. (Qu.)

H. THOMSON, B.A., M.A., Ph.D. (Case Western Reserve)

2 THE UNIVERSITY — GENERAL INFORMATION

The University's Royal Charter was granted by King William IV in 1821. Today, more than 17,000 students from around the world study for their degrees on the Montreal campus (which now covers an area of almost seventy acres) and at Macdonald College at the west end of the island. Macdonald College was established in 1907 for studies in agriculture, teacher training, and household science. The Centre for Continuing Education at the College and at McGill provides between 13,000 and 14,000 Montrealers with the opportunity to continue their education at night. Countless other Montrealers participate in many conferences, lectures, musical and dramatic productions, film showings, etc., which take place on the two campuses.

THE FACULTY OF MANAGEMENT

In establishing the Faculty of Management in 1968 McGill recognized the academic importance of the

inter-disciplinary studies that had, up to that time, been carried on in two of its schools — the old School of Commerce part of the Faculty of Arts and Science, and the newer Graduate School of Business part of the Faculty of Graduate Studies and Research.

Since then both the graduate and undergraduate programs have been completely revised, to the enrichment of both.

A sum from one of McGill's major campaigns in 1956 had been set aside and ear-marked for a Management Building, but it was not sufficient to enable construction to proceed. To the great good fortune of the University, the late Samuel Bronfman, while a Governor of the University, made the key donation which enabled McGill to plan and build the Samuel Bronfman Building. It is located next to the Redpath and McLennan Libraries, on the border of the Campus and fully accessible to the community we serve.

AIMS OF THE B.COM PROGRAM

Management means getting things accomplished as effectively as possible. The ideal manager is a well-rounded man, with strong character, good judgment, breadth of vision and thorough competence in the management skills — behavioural and quantitative — which are being developed in this age of rapid technological change.

When everything is changing at such a fantastic pace, it is no longer possible to train good managers by simply passing on to them wisdom developed in a past age. Experience can still be a great teacher, but only if intelligently interpreted and applied. Our concepts must not be static, we must develop managers who can meet new challenges as they arise.

The different qualities required in a competent manager are teachable in varying degrees. Our aim is to give students an opportunity to master new management techniques. We believe there are certain management skills which constitute "core" subjects which every manager should have — but beyond these, we encourage students to follow lines of interest through which they will emerge broadly educated. A good manager must be able to understand and to work with both the generalists and specialists that are required in our complex society.

HOWARD ROSS LIBRARY OF MANAGEMENT

The Howard I. Ross Management Library, named for the first Dean of the Faculty and Chancellor of the University,occupies the complete second floor of the Bronfman Building, and consists of over 184,000 books, periodicals and pamphlets in the fields of economics, business, industrial relations, and management. These materials are readily available on the shelves and in files in the library reading room. The facilities of the McLennan Library, and the many other University Libraries are also available to students.

MANAGEMENT UNDERGRADUATE SOCIETY

The Management Undergraduate Society (M.U.S.) represents all undergraduate students in the Faculty of Management, and is charged with representing the students' views both inside and outside the Faculty. The M.U.S. is one of the most active student societies on campus and is responsible for many activities ranging from Management Week to social events within the Faculty.

GENERAL INFORMATION FOR NON-CANADIAN STUDENTS

A pamphlet describing immigration regulations in detail and containing notes and guidance to students from other countries is available from Canadian immigration officers, Canadian Embassies and British Consular offices, or from the Immigration Branch, Department of Citizenship and Immigration, Ottawa, Canada. Local immigration officers will be ready to give advice and help.

A useful handbook entitled *University Study in Canada* can be obtained from Canadian Embassies, Consulates, and the office of the High Commissioners and Trade Commissioners. A leaflet entitled *Notes for Foreign Students Who Wish to Attend a Canadian University* may be obtained from The Association of Universities and Colleges of Canada, 151 Slater St., Ottawa, Ontario K1P 5N1.

Further information may also be found in the McGill University *General Announcement,* available at the Registrar's Office.

3 FEES

The University reserves the right to make changes without notice in the published scale of fees.

Fees are refundable under special conditions described in the *General Announcement.*

The tuition fees for the Bachelor of Commerce program are $19.00 per credit plus $60.00 Student Services fees and $33.00 Students' Societies fees.

The schedule of fees for Part-time, Special and Visiting students is given in the *General Announcement.*

REGULATIONS FOR PAYMENT OF FEES

NEW STUDENTS

Students entering the University for the first time are required to pay the first instalment of their fees either by mail or in person at the Accounting Office within 10 days after registration, the second instalment before January 15, 1977.

RETURNING STUDENTS

Students who have completed one or more years and intend to register in the succeeding year must pay one half of the total sessional fee by mail or in person to the Accounting Office before August 23, 1976, otherwise they will not be permitted to register. Instructions for paying fees in advance will be mailed to all returning students, either with their Sessional Reports of Standing or a short time later. Students who have been notified by the University of the award of a scholarship, bursary or student loan, and who require this award for payment of the first instalment of fees, must obtain from the Student Aid Office, McGill University, a *Permit to Delay Payment of Fees.*

The second instalment is due by January 15, 1977. A late payment fee is charged for payment after this date.

LATE REGISTERING STUDENTS

Students registering late must pay their fees at the time of registration.

As soon as possible after the prescribed dates for the payment of fees the Chief Accountant will send to the Registrar's Office a list of the registered students who have not paid their fees. Reports of standing, transcripts of record and diplomas will be withheld until such time as the fees are paid or a satisfactory arrangement is made with the Chief Accountant.

SPECIAL FEES AND PENALTIES

Application for Admission (for new students only)	$ 15.00
Late registration	25.00
Late payment (after specified date)	
First 30 days	10.00
After 30 days	25.00
Graduation fee	10.00
Duplicate diploma	10.00
Certified transcript of students' record:	
First 2 copies each	1.00
Additional copies, up to 10 copies made at same time, each	0.25
Re-reading examination paper	10.00
Supplemental examinations, each paper	10.00
Changes in course, each change after specified change of course period	5.00

4 SCHOLARSHIPS, PRIZES, MEDALS AND FINANCIAL AID

Full information is given in the *Undergraduate Scholarships and Awards Announcement,* which may be obtained from the Registrar's Office.

CANADA PERMANENT TRUST. — Two annual prizes of $500 and $300, awarded by the Faculty of Management to students entering their final year of the B.Com. program, for excellence in the first two years of their program.

THE CHARTERED ACCOUNTANTS STUDENTS SOCIETY OF QUEBEC. — Prize in Accountancy and auditing.

CLARKSON, GORDON & CO. PRIZE. — $100, awarded at the end of the Final year to the student who obtains the highest standing in Accounting and Auditing.

PROFESSOR J.A. COOTE PRIZE. — Value $100. Awarded to a student in Organizational Behaviour and Personnel.

FINANCIAL EXECUTIVES INSTITUTE. — Silver Medal in Finance.

L.J. FORGET & COMPANY AWARD. — Value $400, established in 1973 by L.J. Forget & Company. Awarded annually by the Scholarships Committee of the Faculty of Management for excellence in the Finance courses in the Bachelor of Commerce Program.

DR. RICHARD GELFAND PRIZE. — $100 to a student in Marketing.

STEPHEN S. GOLDBLOOM MEMORIAL PRIZE. — Value $100. Established by friends and classmates in memory of Stephen S. Goldbloom, a second-year Management student active in Campus student life and a student representative on the Board of Governors, who passed away during the summer of 1975. To be awarded to a student graduating in the Faculty of Management with good academic standing having made a notable contribution to student life.

JOSEPH H. JACOBS PRIZE. — Value $90, established under the will of the late Joseph H. Jacobs, is awarded as a prize for Second year Accountancy.

LADDIE MILLEN MEMORIAL PRIZE. — Established by Mr. J. Ernest Millen in memory of his son, Laddie Millen, who was killed in action in World War I. Three prizes will be available annually to Industrial Relations students in the Bachelor of Commerce Program. The awards will be in the amounts of $500, $300, and $200, representing first, second and third prize for a competitive essay on an industrial relations topic. The subject of the essay will be determined each year by a committee of industrial relations faculty members and will be available from the Director of the Industrial Relations Centre. The prize winning essay will be selected by this committee, which will include the Dean of the Faculty of Management and the Director of the Industrial Relations Centre. Deadline each year for submission of essays to the Director of the Industrial Relations Centre will be May 15th. If, in the opinion of the committee, no essay is considered satisfactory for a prize at any particular level, the award at that level will not be granted.

MARSH AND MCLENNAN AWARD. — An annual scholarship of $570, covering full tuition, awarded to a student entering the final year of the B.Com. program, for excellence in the first two years of the program.

MISAWA HOMES PRIZE IN INTERNATIONAL BUSINESS. — $100 to be awarded to a student in the final year of the B.Com. program for outstanding performance in the International Business Management Elective Group. To be awarded on recommendation of the International Business Group Adviser and the Chairman of the Faculty of Management Scholarships Committee.

PRICE WATERHOUSE & CO. AWARD. — Value $250, awarded by the Scholarships Committee of the Faculty of Management to a student in the B.Com. program completing his Second year and proceeding to his final year and planning to continue his studies with a practising firm of chartered accountants. The winner must have high standing in the Second year examinations and outstanding academic record, ability, and other qualifications.

TOUCHE ROSS & CO. AWARD. — An award of $250 to a student who has completed the Second year, will be entering the final year in the B.Com. program, and who intends on graduation to qualify as a Chartered Accountant. Awarded on high standing in the Second year and on academic record, ability and personality and other characteristics considered to be suitable.

HYMAN HERBERT STEIN AWARD. — Approximately $250, in memory of the late Hyman Herbert Stein, B.Com. 1925, for an award for a student entering the Second year of the three-year Commerce Program. Awarded at the discretion of the Dean of the Faculty, and ability and financial need will be taken into consideration when making the award.

SILVERMAN MERIT AWARDS. — A limited number of scholarships valued at $850 annually, are available to outstanding applicants to the B.Com. program, tenable over the usual three years of the program, provided high standing is maintained. Application through the Office of the Associate Dean, Faculty of Management.

SIR EDWARD BEATTY GOLD MEDAL. — A gold medal endowed by the late Sir Edward Beatty, former Chancellor of the University, awarded to the student in the B.Com. program with the highest distinction in Economics. Awarded, at present, on the aggregate marks for the three full year courses. Principles of Economics (or Honours alternatives), Money and Banking, and Economic Analysis (or Honours alternatives).

FACULTY OF MANAGEMENT PRIZES. — The Faculty of Management awards 3 prizes of $100 each to students in their final year registered in the areas of Computers and Systems, Small Business, and Quantitative Methods.

5 STUDENT SERVICES AND RESIDENTIAL FACILITIES

Full information concerning Student Services and Residential Facilities is given in the *General Announcement* available from the Registrar's Office.

6 ADMISSION

a) The student will be admitted to the program upon satisfactorily completing the CEGEP or College Equivalent program (for Quebec students) or their equivalent (for non-Quebec students). To provide the entering student with as great a degree of flexibility in his pre-university program as possible, the specific course requirements for entry to the Faculty have been kept to two one-term courses in differential and integral calculus, in addition to the English and French courses required in every CEGEP program. Students who select accounting as their Management Elective group (see page 16) *and* who intend to qualify as C.A.'s after graduating, are urged in addition to include two one-term courses in micro and macro economics in their CEGEP program.

b) If a student feels that he merits admission with advanced standing on the basis of his academic background, he may apply for such advanced standing in his initial application for admission to the Faculty.

c) Students from outside the Province of Quebec, who have not quite completed the equivalent of CEGEP graduation may under certain circumstances be admitted to the program; they will be required to take correspondingly more credits for their degree than those students admitted under the conditions of a) above.

d) Students wishing to enter the Bachelor of Commerce program in September must apply in writing, before March 1, to:

Admissions Office
F. Cyril James Building
McGill University
P.O. Box 6070, Station A
Montreal H3C 3G1

Students presently enrolled in another Faculty of this University wishing to transfer to the Bachelor of Commerce program in September must apply in writing not later than July 1, 1975 to:

Associate Dean
Faculty of Management
McGill University
P.O. Box 6070, Station A
Montreal H3C 3G1

e) The usual time for beginning the Bachelor of Commerce program is in September; nevertheless it is possible for a student to commence his program in either January or at the mid-May Summer Session. Further details about non-September admissions, course-sequences, etc., can be obtained from the Undergraduate Program Adviser.

f) Each accepted candidate will receive an acceptance letter which must be presented at Registration. The Faculty is not bound to accept all candidates who have satisfied minimum admission requirements.

g) The Faculty endeavours to enable a wide range of students, from many different countries, to enrol in the Bachelor of Commerce program: nevertheless, a reasonably high competence in reading English and in writing either English or French is expected from all students. Although lectures, texts, and reference material will, in general, be in English, students whose native tongue is French will be permitted to write their examinations and term papers in that language.

READMISSION

A student wishing to return to the Faculty after an absence of a portion of an academic year or more must apply in writing to the Associate Dean.

7 B. COM. PROGRAM REQUIREMENTS

ACADEMIC REQUIREMENTS FOR GRADUATION

a) A student is graduated upon satisfactory completion of the full number of credits indicated in his letter of acceptance, subject to the curriculum requirements. For students entering with a CEGEP Diploma, the number will generally be 90.

b) All students are expected to conform to the curriculum set out below. A student wishing to depart from that program must obtain written permission from the Associate Dean.

c) Students in a Major or General program who graduate with a CGPA of 3.5 or better will be awarded their degrees with "Great Distinction"; those with a CGPA between 3.3 and 3.49 will receive their degrees with "Distinction".

RESIDENCE REQUIREMENTS

a) A student who has transferred with advanced standing to the Faculty of Management from another college or university, or from another Faculty within this University, is required to complete a minimum of 60 credits while registered in the Bachelor of Commerce program, including such required courses as are deemed necessary, to become eligible for the degree of Bachelor of Commerce.

b) Completion of the degree requirements normally will require three years of study. A maximum of four years is permitted, however, for completion of the requirements for the degree. In exceptional circumstances, this maximum requirement may be extended by the Associate Dean.

ACADEMIC COUNSELLING

All undergraduate students are required to meet with a Faculty Adviser prior to registration to complete a Study Plan Form. Students entering the Faculty for the first time are required to make an appointment with a Faculty Adviser to be held during the two week period prior to registration, and should call 392-5854 after receiving their letter of admission to the Faculty to arrange their appointment.

Other students will meet with their Faculty Adviser at the end of the winter term (April-May). NO STUDENT WILL BE PERMITTTED TO REGISTER WITHOUT HAVING COMPLETED A STUDY PLAN FORM.

Students wishing general information about the program, or encountering difficulties (academic or personal) during the session, should contact Ms. Lesley Richardson.

REGISTRATION

a) All students must register during the normal registration period as indicated in the Calendar of Dates of the University.

b) Students who fail to register during the normal registration period may do so later on the date designated by the University for late registration upon payment of a late registration fee.

c) Students who wish to change the courses for which they are registered within the change of course period must apply to the Associate Dean. Permission may be granted provided that such changes do not involve conflicts in timetable nor destroy the required sequence of courses. Course cards must be obtained from the Office of the Associate Dean.

d) Students wishing to withdraw from a course after the change of course deadline must obtain permission of the Associate Dean. A "W" will be indicated on the transcript, but will not be counted in the GPA if withdrawal takes place before October 15, 1976 for A courses and February 18, 1977 for B courses and November 26, 1977 for D courses.

e) Students who obtain approval from the Associate Dean to withdraw after this period

will have a WF (withdrew failing) indicated on their transcript. Approval will be granted only in exceptional circumstances, and will generally not be approved during the last month of classes. The GPA will not include the WF.

f) Each student is responsible for the completion of all courses for which he has registered, other than those from which he has received written permission to withdraw. Failure to complete course requirements will automatically result in a grade of F on the student's permanent record.

Further regulations concerning withdrawal are given in Section 4.3 of the General Announcement which may be obtained from the Registrar's Office.

CREDITS

a) In general, a course lasting one term (13 weeks) with three hours of lectures per week (and laboratory periods and conferences, where appropriate) will carry a weight of three credits. Similarly, a three-hours-a-week course lasting through both the fall and winter (26 weeks) will carry a weight of six credits. Most of the courses in the program are three-credit courses.

b) Students wishing to make up deficiencies in their background, or to accelerate their progress to the degree, may apply to the Associate Dean to take summer courses, either at this University or at some other institution. Credit will be granted for such work only if it fits intelligently into the student's overall program, and if privilege of doing such work for credit has previously been approved in writing by the Associate Dean. Only grades considered the equivalent of C or better will be accepted in work done at another institution.

CLASSIFICATION OF STUDENTS

a) Students who have completed a College Equivalent or CEGEP program in the Province of Quebec will take a total of 90 credits in the university program.

b) Students from outside the Province of Quebec who have not completed the equivalent of CEGEP graduation may be admitted to the program, but will require more than 90 credits for their degree.

COURSE LOADS

a) A full-time student in satisfactory standing will normally have a course load of 15 credits per term.

b) Entering students may be authorized by the Associate Dean to take up to 18 credits per term if their record upon entering the program warrants it.

c) Full-time students whose grade point average the preceding year was 3.0 or better may take 18 credits per term.

d) Full-time students on probationary standing will have a course load of 12 credits per term, and may add to this a repeated course in which a grade of D or F was obtained at the first attempt. A student on probation is not permitted to hold any executive position in campus organizations, nor engage in intercollegiate sports.

e) Only full-time students in satisfactory standing will be eligible to register for Honours programs, or to compete for prizes, scholarships, or bursaries.

EXAMINATIONS

a) Students may write examinations in English or French.

b) Final examinations in all courses are held during an examination period immediately following the end of lectures. In some courses, there is no final examination; standing in these courses is determined by the instructor on the basis of term work or class tests.

c) No student will be permitted to write an examination in any course unless he has fulfilled the requirements of the course to the satisfaction of the instructor.

d) A student who has not received a satisfactory grade in a course may apply to write a supplemental examination in that course. If permission is granted, he must write this supplemental examination in the following examination period or in the August immediately following. Written application to write a supplemental examination must be received by the Associate Dean's Office at least 6 weeks before the examination is to be written. A fee of ten dollars ($10.00) for each supplemental paper is payable to McGill University.

e) A student who, because of illness or other reasons verified and accepted by the Associate Dean, has been unable to write one or more sessional examinations, may write deferred examinations in their stead for full credit. The usual $10.00 fee for sitting a supplemental examination will be waived in this case. The Dean's Office must be informed within one week of the examination of the reasons for the absence.

f) Instructors are not permitted to grant any special treatment, regarding examinations, to any student. If a student wishes to contest his final grade in any course, he should apply in writing to the Associate Dean.

LETTER GRADES AND THE GRADE POINT AVERAGE (GPA)

a) The following letter grade and rating will be used in assessing course results:

A	(80% — 100%)	4	Satisfactory
B	(65% — 79%)	3	
C	(55% — 64%)	2	
D	(45% — 54%)	1	Conditional Pass
F	(less than 45%)	0	Failure

b) A grade of C or better is required for all courses which are prerequisite to further courses in the student's program. In addition, *students will be required to obtain a satisfactory grade (C or better) in all core courses.* The only exception will be that one D in each academic year will be tolerated in the student's core program, provided that course is not a pre-requisite to further courses in his program. If two or more D's are obtained in core courses, the excess over the single allowable D must be improved.

c) A failure carries no credit towards the degree;

d) A grade of D is considered a pass only when it is in a terminal course;

e) A grade point average (a weighted average of the ratings obtained in all courses taken during the preceding twelve months, with the number of credits per course serving as the weight for the course) will be computed in May of each year. For example, a student who achieves a B in a 6 credit summer course the preceding summer, and obtains an A, B, B, D, D, F in 6, 3, 6, 6, 3, 6 credit courses respectively (provided the D's are in terminal elective courses) will have earned only 30 credits, and will have a grade point average of 2.20.

f) The student's standing will be determined on the basis of his annual grade point average as follows:

Satisfactory standing — GPA of 2.0 or better
Probationary standing — GPA of 1.5 to 1.99
Unsatisfactory standing — GPA less than 1.2 in Sophomore year — GPA less than 1.5 in subsequent years.

g) The cumulative grade point average (CGPA) will include all courses taken by the student from the beginning of his program.

h) A student on probationary standing registers for a maximum of 12 credits of new course material per term, and must achieve by the end of that year either a CGPA of 2.0 or better, or a GPA for that year of 2.5 or better. Otherwise the student's standing becomes unsatisfactory. A student on probation is not permitted to hold any executive position in campus organizations, nor engage in intercollegiate sports.

i) A student whose standing is unsatisfactory will be required to withdraw from the Faculty unless there are extenuating circumstances, in which case he may appeal to the Associate Dean for permission to continue.

j) A student is required to have a CGPA of 2.0 or better upon graduation.

ACADEMIC RECORD

a) The student's transcript will include a listing of the courses taken and the letter grades obtained.

b) If a letter grade of D or F is subsequently improved upon, both the initial and final grade will appear on the transcript.

SUMMER SESSION

Each summer, from mid-May to mid-August, most Primary and Secondary Core courses and several elective courses are offered by the Faculty of Management for full credit. They are available to Management students, and to students from other faculties and universities with the necessary course prerequisites. In addition, the University offers a number of courses in various disciplines at different levels during the summer. Information on management summer courses is available from the Office of the Associate Dean or from the Summer Session Office, Administration Building.

8 CURRICULA AND PROGRAMS

SUMMARY OF PROGRAMS OFFERED THROUGH THE FACULTY OF MANAGEMENT

Bachelor of Commerce Degree — A three-year program of full-time study (which can also be pursued on a part-time evening basis) designed to prepare the student for the B.Com. degree.

Evening Certificate and Diploma Courses — Courses offered jointly by the Faculty and the Centre for Continuing Education in accounting, business and management, and related subjects to enable qualified evening students to earn the certificate and/or diploma awarded by the Centre. Courses to assist evening students to meet the requirements of certain professional societies. (See *Calendar of the Centre for Continuing Education).*

The Financial Research Institute — McGill students have access through the Financial Research Institute to financial and economic data banks. The Institute itself is a non-profit corporation which is jointly owned and operated by Canadian Companies and Universities. The purpose of the Institute is to foster knowledge and understanding of all quantitive aspects of financial and economic analysis.

McGill Management Institute — The Institute offers a series of courses, seminars, and other training activities for business executives.

Master of Business Administration Degree — A two-year program of full or part-time study leading

to the Master of Business Administration degree, for qualified students holding an undergraduate degree.

ACADEMIC COUNSELLING

All undergraduate students are required to meet with a Faculty Adviser prior to registration to complete a Study Plan Form. Students entering the Faculty for the first time are required to make an appointment with a Faculty Adviser to be held during the three week period prior to registration, and should call 392-5854 after receiving their letter of admission to the Faculty to arrange their appointment.

Other students will meet with their Faculty Adviser at the end of the winter term (April-May). NO STUDENT WILL BE PERMITTED TO REGISTER WITHOUT HAVING COMPLETED A STUDY PLAN FORM.

Students wishing general information about the program, or encountering difficulties (academic or personal) during the session, should contact Ms. Lesley Richardson at 392-5854.

CURRICULUM FOR THE B. COM. — GENERAL PROGRAM

The student who has been admitted to a 90 credit program will follow the curriculum set out below. A student wishing to depart from this program must obtain written permission from the Associate Dean.

The FIVE components of the program are:

PRIMARY CORE

A total of 42 credits is taken in common by all students in the program. This involves 33 credits offered by the Faculty, and 9 credits offered by other Departments. Courses normally taken in the first year (U1) are Accounting I, Social Psychology, Organizational Behaviour, Principles of Economics (Economics Department), Statistics I and II, Applied Matrix Alegebra (Mathematics Department). Courses normally taken in the second year (U2) are — Organizational Theory or Policy, Managerial Economics, Finance I, Marketing Management, Management Information Systems, Operations Research.

SECONDARY CORE

Students are required to complete 12 credits from the following courses which comprise the Secondary Core:

Accounting II; Business Law (6 credits); Computer Based Information Systems; Finance II; Introduction to Industrial Relations; Marketing and Society; Organizational Theory or Policy.

Students who complete Joint Concentration Groups (see below) are exempted from the Secondary Core.

Note: A given course cannot be counted towards the fulfillment of *both* Secondary Core and a Management Concentration Group.

MANAGEMENT CONCENTRATION GROUP

Each student will elect a total of 18 credits chosen from one of the nine Management concentration Groups listed below. The elective courses from the Group, together with the breadth provided by the Cores listed above, should enable the student to develop some depth in one particular area in Management.

Accounting
Computers and Systems
Finance
Industrial Relations
International Business
Marketing
Organizational Behaviour and Personnel
Entrepreneurship, Corporate Policy and Smaller Business
Quantitative Methods

NON-MANAGEMENT ELECTIVES

Each student is required to complete a certain amount of course material outside the Faculty of Management. The number of credits required is determined by the student's pre-university background.

1. A student with a non-commerce background at CEGEP will be required to take 12 credits outside the Faculty of Management.
2. A student with a commerce background at CEGEP will be required to take 18 credits outside the Faculty of Management.

The student may register for any courses offered in the University outside the Faculty of Management, for which he or she has the required prerequisites, to satisfy the non-Management elective requirements.

UNRESTRICTED ELECTIVES

The remainder of the student's program, usually a total of 6 credits, will be chosen from the complete range of university course offerings, to complete the 90 credits needed for the degree.

SUMMARY

It will thus be seen that the program involves a total of 90 credits broken down in the following way:

1.	Primary Core	42 credits*
2.	Secondary Core	12 credits
3.	Management Concentration Group	18 credits
4.	Non-management electives	18 credits**

* Students receiving exemptions for course material taken at CEGEP may replace these credits with Unrestricted elective material.

**See Section on Non-Management Electives above.

EXEMPTIONS

A student who completes core course material with sufficiently high standing before entering the three-year program will, if the courses are judged by the

Faculty to be the equivalent of core courses, be granted exemption from the corresponding Primary Core course. A student may replace the exempted course with any elective or higher level course offered in the Faculty for which he has the necessary prerequisites. It must be emphasized, however, that while the exemption absolves the student from the need to repeat the course material, he receives no reduction in the number of credits needed for the degree.

JOINT CONCENTRATION GROUPS

The student wishing to complete the non-overlapping requirements of two management concentration groups (18 credits for each) will be permitted to do so, and will be waived his Secondary Core course requirements. He must obtain the approval of his program from two Faculty Advisers, one from each of the areas involved. Both Management Concentration Groups will appear on the student's transcript.

MAJOR AND HONOURS PROGRAMS

A student preferring a more intensive background in one subject area may elect a Major or an Honours program in that subject. Major programs are at present available in Economics, Economics and Political Science, Industrial Relations, Mathematics, and Psychology. A Major program exempts the student from the requirement of taking a Management Concentration Group; he must complete all of the Primary Core courses, with the exception that he must substitute for certain core courses their equivalent in another department — Mathematical Statistics 323 and 324 (Mathematics Department) for Statistics I and II; Honours Economics students only may substitute Economics Statistics 357 (Economics Department). Although the requirements for a Major vary from one discipline to another, they basically require a student to take 54 credits in that subject, 36 of which must be in courses actually given by the relevant department in the Faculties of Arts and Science; the remaining 18 credits are chosen in related areas through consultation with the Department concerned. The degree of "Bachelor of Commerce", Major in " " is then awarded upon recommendation of the Department concerned.

Because of the heavier demands of Majors or Honours programs, a student desiring to pursue a program of this type must declare his intention no later than the beginning of his second year but preferably at the very beginning of his program. The student is then assigned to an adviser from the appropriate department and a suitable program is worked out, incorporating this Faculty's core requirements and the requirements of the Major or Honours Department. The courses in the Major subject must be approved each year by the Majors adviser in the department concerned. Students wishing to take a Major program in a subject not listed above should consult the Associate Dean to determine whether such a program is possible.

Majors in Economics will be permitted by the Economics Department to count Statistics I and II as 6 of the required 36 credits in Economics, leaving 30 additional credits to be taken in Economics. All Major and Honours students in Economics will be exempted from the core course Managerial Economics.

The Major in Industrial Relations allows the student to study the main economic and social forces which affect the employer-employee relationships in a theoretical and practical setting. The student can choose from a wide range of courses in deciding how he or she will constitute the program, being able to concentrate to a considerable extent in the areas of Industrial Relations which interests him or her. All students will be required to complete the Management Core plus the following courses in Industrial Relations: 279-294, 394, 491, 492. Labour Economics (154-306) is also compulsory. The twelve additional credits required for the Majors program may be chosen from a variety of course offerings in Industrial Relations, Labour Economics, Industrial Sociology, Labour Law, Personnel and Organizational Behaviour. The choice must be made in consultation with the Majors adviser.

In subjects where the extent of overlap between the 36 credits of the Major subject and the Management core is not great it will be necessary for the student to enter the Major program at the beginning of his U1 year. This would be the case, for example, for a Major in Mathematics, since Mathematical Statistics would have to be substituted for Statistics I and II in the Sophomore year.

An Honours program is available in Economics, as well as a Joint Honours program in Economics and Accounting. The difference between the Honours and Major programs in Economics is not one of quantity but rather of quality, the Honours program involving study in greater depth.

Students who register with the Economics Department for their Honours program at the beginning of their U1 year will take the introductory Honours course, Introduction to Economic Theory, in place of Principles of Economics. However, a student who decides at the beginning of his U2 year that he wishes to follow the Honours program may be permitted to do so by the Economics Department if he has achieved sufficiently high standing in the general course, Principles of Economics. In his U2 year, the Honours Economics student will take three Honours courses: History of Economic Thought, Macroeconomics, Economic Statistics. In his Final year, he will choose three Honours Economics courses.

The Joint Honours program in Economics and Accounting will involve all the requirements of the Honours in Economics, with only two Honours Economics courses chosen in the Final year. In addition, the student will complete 18 credits in Accounting, courses 1, 2 and 7 and any other three courses in the Accounting Group.

Students wishing to pursue a Major or Honours program, other than those outlined above, or desiring further information about such a program, should consult the Associate Dean.

The requirements for satisfactory standing apply to students in a Major program as well as to students in the general program. Students in an Honours program will be required to maintain a 3.0 average in their Honours courses.

OPTION IN FOOD SERVICES ADMINISTRATION

This option has been designed to provide the specialized knowledge needed for a career in the Hospitality Industry. There is a body of administration and operational management concepts and principles that is common to the function of management in any industry. The challenge of a specialized option is to develop in the student the perspective, flexibility and creativity that will enable him or her to meet the vocational aspects of the specialization as well as providing the knowledge and ability to function in the constantly changing environment of management problems and decisions inherent in a complex multi-segmented growing industry. The option has been designed to integrate the general managerial principles and concepts and the specific hospitality applications of these principles and concepts into a core of knowledge that will permit the graduate to be creatively employed with the greatest possible advantage to himself, to the community in which he lives, and the industry in which he works. The student follows the program as set out below:

PRIMARY CORE

as in present B. Com. program
done in U1 and U3 at McGill campus.
(total 42 credits)

MANAGEMENT CONCENTRATION GROUP

complete requirements of any of the 9 Groups
done in U1 and U3 at McGill campus.
(total 18 credits)

NON-MANAGEMENT & UNRESTRICTED ELECTIVES

complete 8 required & 2 elective 3 credit courses below
done in U2 at Macdonald College

REQUIRED

Food Service Production
Food Facility Layout, Planning & Engineering
Basic Nutrition
Food Service Industry Administration
Food Standards 1
Food Standards 2
Food Microbiology and Sanitation
Food Administration Project

ELECTIVES (choose 2)

Instructional Communications 1
Food Products Development
Economics of Agriculture
Farm Production Economics
Renewable Resources Survey
Rural Sociology
Communication Extension Methods
Recreation Resource Management

DIPLOMAS OF THE ORDER OF CHARTERED ACCOUNTANTS OF QUEBEC, THE CORPORATION OF INDUSTRIAL ACCOUNTANTS OF QUEBEC AND THE CERTIFIED GENERAL ACCOUNTANTS CORPORATION OF THE PROVINCE OF QUEBEC

McGill B.Com. graduates who wish to qualify for membership in any of the above professional accountancy associations are required to register with the respective association, to follow a program of studies through the McGill Centre for Continuing Education and to write a final professional examination. Related work experience under the control of the association is also required.

For further information, students should consult the Associate Director, Management, Centre for Continuing Education, Strathcona Hall, 772 Sherbrooke Street West, and the association of their choice. Their offices are located as follows:

The Order of Chartered Accountants of Quebec
680 Sherbrooke West, 7th floor,
Montreal H3A 2S3
Telephone: 861-1891

The Corporation of Industrial Accountants of Quebec
1509 Sherbrooke Street West
Suite 15
Montreal H3G 1L7
Telephone: 931-2509

The Corporation of Certified General Accountants of Quebec
5165 Queen Mary Road
Suite 512
Montreal H3W 1X9
Telephone: 487-3544

UNDERGRADUATE COURSES OF INSTRUCTION

SPECIAL NOTE

Course numbers involve a seven place designation (see illustration below).

280 — 3	2	3	B	
F1	F2	F3	F4	F5

Field 1 — Involves a three-digit number designating the department or group within the University offering the course. In the Faculty of Management the following association of numbers and subject areas will be used.

271	Accounting
272	Behavioural Science
273	Computers and Systems
274	Finance
275	Marketing
276	Policy
277	Quantitative Methods
278	General
279	Industrial Relations
280	Primary Core

Field 2 — is a number which designates the level at which the course is usually taken.

Number	Year usually taken in
2	U1
3	U2
4	U3

Field 3 — designates the subject area, being the third digit of Field 1 for elective courses.

Field 4 — designates the sequential number of the course in that subject and year.

Field 5 — is a letter designating the time of year the course is given.

A:	duration Fall term only
B:	duration Winter term only
D:	duration through Fall and Winter terms
L:	duration Summer Session Part I
C:	duration Summer Session Part II

When no term is designated the course is in some years offered in the first term and in others in the second, or in both. An up-to-date schedule should be consulted.

The number of credits that a course carries is not indicated in the course number; in the following course descriptions the course credits are indicated separately.

Example: The course number 280-323B denotes a course offered by the Faculty of Management, part of the Primary Core, usually taken in the U2 year, in Behavioural Science, the third course in that subject, given in the second term. This corresponds to Organizational Theory.

PRIMARY CORE COURSE DESCRIPTIONS

280-211A,B. ACCOUNTING I. (3 credits). For students not intending to specialize in the subject. An introduction to business accounting, considered as an information system serving the decision needs of investors and lenders (financial reporting).

280-212B. ACCOUNTING FOR SPECIALISTS. (3 credits). For students intending to specialize in the subject. An introduction to the elements of financial accounting and accounting theory.

280-221A,B. SOCIAL PSYCHOLOGY. (3 credits). Method and theories of analysing individual and small group behaviour. Topics include person perception, social motivation, attitudes, conformity, group structure, group dynamics and leadership phenomena. Experimental approach to social behaviour is emphasized.

280-222B. INTRODUCTION TO ORGANIZATIONAL BEHAVIOUR. (3 credits) *(Prerequisite: 280-221).* The social psychology of organizations, the relationship of man to the organization in which he works, his motivation, attitudes and involvement in his work. Theories of perception, motivation and leadership as they relate to organizational problems.

280-323A,B. ORGANIZATIONAL THEORY. (3 credits). (Prerequisites: 280-221, 222) The organization as a unit of analysis. Analysis of organizations as distinctive collectivities through an understanding of theories and problems of organization. Contributions of psychology, sociology and economics towards solving organizational problems of adaptation authority and power, conflict resolution, etc.

154-200D. ECONOMIC ANALYSIS AND APPLICATIONS. (6 credits). An introduction to the study of economics, including price theory, national income determination, money and banking, international economic relations, and economic policy. **(Offered by the Economics Department)**

280-341A,B. FINANCE I. (3 credits) *(Prerequisites: 280-271, 280-211 or 212, 154-200D).* An introduction to financial management and the role of finance, both within the firm and the economy as a whole. The institutional framework of the firm is discussed, including legal forms, taxes, financing instruments and the capital markets. An introduction to the analytics of finance is presented including the pricing of financial instruments, simple models of capital market equilibrium, the financial structure of the firm, cost of capital, dividend policy, investment criteria for new capital spending proposals, and working capital management.

189-224A,B. APPLIED MATRIX ALGEBRA. (3 credits). Matrix addition and multiplication. Partitioning into blocks. Trace and determinant. Simultaneous linear equations. Rank and inverse. Symmetric matrices, and their eigenvalues and eigenvectors; reduction to diagonal form. Positive definite and semi-definite matrices; quadratic forms. Applications to and examples in operations research, linear programming and statistics, with use of the computer. *Intended for students interested in applications of matrix algebra to Management, Social Science, and similar fields.*

280-331A,B. MANAGEMENT INFORMATION SYSTEMS. (3 credits) *(Prerequisite: 189-224).* This course provides an introduction to computer systems and program flowcharting. Specific emphasis is placed on developing the ability to program (in Fortran) and utilise the resources available on the

McGill time-sharing system. Problems of implementing computer systems in the organization are discussed.

280-393A,B. MANAGERIAL ECONOMICS. (3 credits) *(Prerequisite: 154-200).* The course focuses on the application of economic theory to management problems and the economic foundations of marketing, finance, and production. Attention is given to the following topics: price and cost analysis, demand and supply analysis.

280-352A,B. MARKETING MANAGEMENT. (3 credits). An introduction to marketing principles and management, focusing on the problems of the marketing manager in the measurement of market opportunities and the allocation of the marketing effort. Emphasis is on decision-making in a marketing context. Topics covered include: the marketing concept; marketing strategies; marketing research; buyer behaviour; product and price policies; advertising, distribution and sales force decision. The course relies on lectures, text material and case studies.

280-373A,B. OPERATIONS RESEARCH I. (3 credits) *(Prerequisite: 280-271; 280-331; 280-341 may be taken concurrently).* The object of the course is to introduce the student to applications of mathematical model building and analysis in managerial decision-making. The student is introduced to some of the following topics: mathematical programming including linear programming and network analysis; simple stochastic processes including waiting lines and inventory systems; simulation.

280-271A,B. STATISTICS I. (3 credits) *(Prerequisite: 6 credits in calculus).* The course introduces the student to statistical concepts and methodology, demonstrates their application to management problems, and constitutes a foundation for further study in the subject. Topics include: descriptive statistics and statistical inference; probability theory, random processes, some important discrete and continuous probability distributions, sampling distributions, introduction to decision theory, index numbers

280-272A,B. STATISTICS II. (3 credits) *(Prerequisite: 280-271).* Decision theory, hypothesis testing and estimation, goodness-of-fit tests, analysis of variance, sample surveys and experimental design, simple and multiple regression and correlation analysis, time series

MANAGEMENT CONCENTRATION GROUPS

ACCOUNTING
COMPUTERS AND SYSTEMS
FINANCE
INDUSTRIAL RELATIONS
INTERNATIONAL BUSINESS
MARKETING
ORGANIZATIONAL BEHAVIOUR AND PERSONNEL
ENTREPRENEURSHIP, CORPORATE POLICY AND SMALLER BUSINESS
QUANTITATIVE METHODS

Each of the Management Concentration Groups offered has a minimum of 18 credits to be taken from the Group. The student will note that a considerable degree of choice is present within each Group.

In general, the student will begin taking courses from his Group by his U2 year; however, a student entering his U1 year with some exemptions from the Primary Core program may so arrange his program to be able to begin his Group in his U1 year.

An adviser is appointed each year for each Management Concentration Group to assist students in the general question of choosing a Group, and to provide students with additional information for intelligent course selection. See ACADEMIC COUNSELLING above.

ACCOUNTING GROUP

Adviser: Professor Marshall

1. FINANCIAL ACCOUNTING I 271-311 (3 credits)
2. FINANCIAL ACCOUNTING II 271-312 (3 credits)
3. FINANCIAL ACCOUNTING III 271-414 (3 credits)
4. ACCOUNTING THEORY 271-411 (3 credits)
5. BUSINESS TAXATION 271-412 (3 credits)
6. SYSTEMS AND AUDITING 271-413 (3 credits)
7. MANAGEMENT ACCOUNTING I 271-313 (3 credits)
8. MANAGEMENT ACCOUNTING II 271-415 (3 credits)
9. MANAGEMENT ACCOUNTING III 271-416 (3 credits)
10. COMPUTER BASED INFORMATION SYSTEMS 273-332 (3 credits)
11. SYSTEMS ANALYSIS AND MODELLING 273-333 (3 credits)
12. INFORMATION SYSTEMS ADMINISTRATION 273-432 (3 credits)

Unlike other Concentration groups, the accounting program has been designed on the understanding that students wishing to follow this specialization will be able to decide accordingly in their U1 year instead of at the beginning of their U2 year. For those exceptions (with grade B or better in course 280-211) who decide on accounting specialization during the U1 year, special arrangements will be made to convert. This will involve additional work without supervision during the summer vacation. Any such students should consult the Faculty Adviser for Accounting as early as possible.

The Accounting Group is made up of nine courses in Accounting (1-9 above) and three courses in related subjects (10-12 above). It is

designed primarily to provide a reasonably analytical introduction to accounting and cognate subjects for students seeking careers in industry, government service or the accountancy profession.

Students who intend to enter the accountancy profession as chartered accountants should take courses 1 to 8 above.

Students who intend to enter the accountancy profession or who are preparing for careers in industry or government service must take courses 1, 2 and 7 and any other three courses in the above list.

In addition, as Secondary Core, they should take courses as specified below.

Courses not taken as part of the degree can be taken through the Centre for Continuing Education.

Intending C.A. students may gain exemption from all but six of the qualifying courses for the C.A. examinations if they so desire. The program for such a student, entering the B.Com. program with no exemptions, would be as follows:

Program for Intending C.A. Students

Year	Courses
PRIMARY CORE	
U1	Accounting 280-212B; Principles of Economics, Social Psychology, Introduction to Organizational Behaviour, Statistics I and II, Applied Matrix Algebra
U2	Finance 1, Managerial Economics, Management Information Systems, Operations Research
U3	Marketing I, Organizational Theory
SECONDARY CORE	
U3	Computer Based Information Systems Entrepreneurship and Corporate Policy Business Law (6 credits)
MANAGEMENT CONCENTRATION GROUP	
U2	Financial Accounting I and II, Management Accounting I and II
U3	Financial Accounting III Systems & Auditing, Business Taxation, Accounting Theory
NON-MANAGEMENT ELECTIVE	
U1	6 credits
U2	6 credits
U3	6 credits if required

To be admitted as a student of the Order of Chartered Accountants of Quebec, one must have a University degree. It is not necessary, for C.A. purposes, to take all of the above courses as degree requirements. The full requirements for C.A. studies may be completed by taking courses offered by the Centre for Continuing Education.

Although 280-212 is the normal course taken by students continuing in Accounting, students who take 280-211 can contact the Accounting adviser's office to determine what additional private summer study should be followed to be permitted to continue with the full *U2* accounting program.

Computer and Systems Group

Adviser: Professor Howson

The objectives of the group concentration is to provide students with a technical and conceptual foundation in the design and development of computer-based information systems for control and management of the organization. The group concentration is a basic program for both the developer and user of information systems. For students strongly interested in a career in the field it is recommended that the basic program be supplemented with additional courses from the selection below, other courses offered by the School of Computer Science, the Accounting Group and Quantitative Methods.

Students are required to take the two courses in Category A; 1 course in Category B; and at least three courses from Category C.

Category A:

273-332 COMPUTER BASED INFORMATION SYSTEMS (3 credits)

273-431 INFORMATION SYSTEMS DESIGN (3 credits)

Category B:

308-210 COMPUTER STRUCTURE AND ASSEMBLY LANGUAGE (3 credits)

308-230 COMPUTERS IN DATA PROCESSING (3 credits)

Category C:

273-333 SYSTEMS ANALYSIS AND MODELLING (3 credits)

273-432 INFORMATION SYSTEMS ADMINISTRATION (3 credits)

273-433 CONTROL AND VERIFICATION OF COMPUTER SYSTEMS (3 credits)

273-434 ADVANCED TOPICS — COMPUTER SYSTEMS APPLICATIONS (3 credits)

or one other option in Category B

OTHER RECOMMENDED COURSES

1. Non-Management Electives

Given by the School of Computer Science; (At least two of these courses strongly recommended as non-management electives for students interested in starting a career in the systems field)

308-230 INTRODUCTION TO BUSINESS DATA PROCESSING (3 credits)

308-315 INFORMATION STRUCTURES (3 credits)

308-320 FILES AND DATA BASES (3 credits)

308-300 PROGRAMMING LANGUAGES (3 credits)

2. Unrestricted Electives

MANAGEMENT ACCOUNTING

Finance Group

Adviser: Professor Rorke

CATEGORY A:

FINANCE II 274-342 (3 credits)

CATEGORY B:

1. APPLIED CORPORATE FINANCE 274-443 (3 credits)
2. INTERNATIONAL FINANCIAL MANAGEMENT 278-482 (3 credits)
3. INVESTMENTS AND PORTFOLIO MANAGEMENT 274-441 (3 credits)
4. CAPITAL MARKETS AND INSTITUTIONS 274-442 (3 credits)

CATEGORY C:

1. MANAGEMENT ACCOUNTING III 271-416 (3 credits)
2. INTERNATIONAL BUSINESS 278-382 (3 credits)
3. BUSINESS TAXATION 271-412 (3 credits)
4. BUSINESS LAW 278-384 (6 credits)
5. STATISTICS III 277-372 (3 credits)
6. OPERATIONS MANAGEMENT 277-472 (3 credits)
7. SIMULATION 277-678 (3 credits)
8. FINANCIAL ACCOUNTING I 271-311 (3 credits)
9. FINANCIAL ACCOUNTING II 271-312 (3 credits)
10. *PUBLIC FINANCE 154-408D (6 credits)
11. *MONEY AND BANKING 154-302D (6 credits)
12. *INTERNATIONAL TRADE AND FINANCE 154-423D (6 credits)
13. INSURANCE AND RISK MANAGEMENT 274-444 (3 credits)
14. Any courses in Category B not already included in the Student's Program.

Others (with Approval) (3 credits)

For the B. Com. concentration in Finance, the student must take the course in Category A, 6 credits in Category B, and 9 credits in Category C. Courses flagged by an asterisk are offered by the Department of Economics. The student is cautioned to observe prerequisite requirements for the courses he selects.

Industrial and Labour Relations Group

Adviser: Professor Goldenberg

The objective of this concentration is to provide a general understanding of the factors affecting employer-employee relations, both at the micro-level and in relation to the socio-economic context in which they occur. Students must complete 18 credits from the courses listed below. Other courses may only be substituted with the approval of the adviser.

1. INTRODUCTION TO INDUSTRIAL RELATIONS 279-294 (3 credits)
2. LABOUR RELATIONS IN QUEBEC. 279-393 (3 credits)
3. COLLECTIVE BARGAINING. 279-394 (3 credits)
4. INDUSTRIAL RELATIONS IN PRACTICE. 279-491 (6 credits)
5. PUBLIC POLICY IN INDUSTRIAL RELATIONS. 279-492 (6 credits)
6. LABOUR AND INDUSTRIAL RELATIONS THEORY. 279-493 (3 credits)
7. LABOUR RELATIONS IN THE PUBLIC SECTOR. 278-688 (3 credits)
8. LABOUR ECONOMICS AND INSTITUTIONS. 154-306 (6 credits)
9. INDUSTRIAL SOCIOLOGY. 166-312 (3 credits)
10. PERSONNEL ADMINISTRATION. 272-423 (3 credits)
11. SALARY ADMINISTRATION. 272-425 (3 credits)

International Business Group

Adviser: Professor Wright

The objective of the group is to help the student develop conceptual and analytical skills necessary to formulate feasible and effective management policies in an international setting.

The International Business Group may be elected *only* as a joint concentration; i.e., the student choosing the International Business Group must also satisfy the requirements of another management concentration group.

The program requirements for the International Business management concentration group are as follows:

(a) At least 12 credits from among the following courses by the Management and Law Faculties.

1. INTRODUCTION TO INTERNATIONAL BUSINESS 278-382 (3 credits)
2. INTERNATIONAL BUSINESS POLICY 278-383 (3 credits)
3. INTERNATIONAL MARKETING MANAGEMENT 278-483 (3 credits)
4. INTERNATIONAL FINANCIAL MANAGEMENT 278-482 (3 credits)
5. THE MULTINATIONAL CORPORATION: LAW, ECONOMICS, AND MANAGEMENT 492-437 (3 credits)

Courses 1 and 2 will normally be taken in the U2 year. Courses 3, 4, or 5 will be taken in the final year. (Course 5 is open only to U3 students with a cumulative grade point average of 3.0 or above).

(b) At least three credits of upper-level international or area courses offered by the Economics Department. Appropriate courses include the following:

1. THE MODERN ECONOMIC HISTORY OF SOUTH ASIA 154-301 (3 credits)
2. POLITICAL ECONOMY OF DEPENDENCE IN THE WESTERN HEMISPHERE 154-312 (6 credits)
3. ECONOMIC DEVELOPMENT 154-313 (6 credits)
4. AFRICAN ECONOMIC DEVELOPMENT 154-314 (3 credits)
5. ECONOMIC DEVELOPMENT OF CHINA 154-315 (3 credits)
6. ECONOMIC DEVELOPMENT OF RUSSIA AND THE USSR 154-331 (3 credits)
7. ECONOMIC HISTORY OF CHINA AND JAPAN 154-341 (3 credits)
8. ECONOMIC HISTORY OF LATIN AMERICA 154-402 (3 credits)
9. ECONOMIC DEVELOPMENT IN LATIN AMERICA 154-403 (3 credits)
10. COMPARATIVE ECONOMIC SYSTEMS 154-421 (6 credits)
11. INTERNATIONAL TRADE AND FINANCE 154-423 (6 credits)
12. INTERNATIONAL ECONOMIES 154-453 (6 credits)

(c) At least three credits of upper-level international or area courses offered by the Political Science Department. Appropriate courses include the following:

1. POLITICS OF LATIN AMERICA 160-319 (6 credits)
2. REFORM AND REVOLUTION IN SOUTH ASIA 160-322 (3 credits)
3. POLITICS AND GOVERNMENT IN EAST ASIA 160-323 (3 credits)
4. POLITICS AND GOVERNMENT IN AFRICA 160-324 (6 credits)
5. EUROPEAN GOVERNMENT AND POLITICS 160-328 (6 credits)
6. THE POLITICAL SYSTEM OF THE USSR 160-329 (3 credits)
7. NON-WESTERN POLITICAL PHILOSOPHY 160-332 (6 credits)
8. CONTEMPORARY INTERNATIONAL SYSTEMS: LATIN AMERICA 160-343 (3 credits)
9. CONTEMPORARY INTERNATIONAL SYSTEMS: EUROPE 160-344 (3 credits)
10. INTERNATIONAL ORGANIZATION 160-345A (3 credits)
11. POLITICS AND FOREIGN POLICY OF ISRAEL 160-347 (3 credits)
12. CONTEMPORARY INTERNATIONAL SYSTEMS: THE MIDDLE EAST 160-348 (3 credits)
13. CONTEMPORARY INTERNATIONAL SYSTEMS: ASIA 160-349 (3 credits)

The Economics and Political Science courses may be taken at any time; it is recommended, however, that they be taken as early in the student's program as possible. The student should try, where feasible, to take an economics course and a political science course both of which focus on the same geographic region, thus, acquiring an interdisciplinary familiarity with a given area. With permission of the adviser, a suitable upper-level course of foreign or international content from another field such as history, sociology, or law may be substituted for the Political Science option.

Marketing Group

Adviser: Professor Cooper

The student is required to take the following course:

1. MARKETING RESEARCH 275-451 (3 credits)

A minimum of 15 credits must be selected from among the following courses:

2. CONSUMER BEHAVIOUR 275-452 (3 credits)
3. QUANTITATIVE ANALYSIS FOR MARKETING DECISIONS 275-458 (3 credits)
4. MARKETING EFFECTIVENESS 275-356 (3 credits)
*5. MARKETING AND SOCIETY 275-351 (3 credits)
6. ADVERTISING MANAGEMENT 275-453 (3 credits)
7. SALES MANAGEMENT 275-455 (3 credits)
8. PHYSICAL DISTRIBUTION 275-353 (3 credits)
9. INDUSTRIAL MARKETING 275-456 (3 credits)
10. INTERNATIONAL MARKETING MANAGEMENT 278-483 (3 credits)
11. RETAIL MANAGEMENT 275-459 (3 credits)
12. MARKETING PLANNING I 275-357 (3 credits)
13. MARKETING PLANNING II 275-358 (3 credits)
14. ADVANCED TOPICS IN MARKETING RESEARCH 275-457 (3 credits)

A balance of courses from the above groupings is suggested. Items numbered 1 to 5 above are fundamental courses and are best taken earlier in the program. Items 6, 7 and 8 deal with elements of the marketing mix, and 9, 10 and 11 focus on particular types of businesses. Items 12 and 13 are designed as capstone or final courses in Marketing.

It is recommended that students examine course offerings in psychology, sociology, and geography to pursue as non-management electives.

**Note:* Marketing & Society can be counted as either a Secondary Core course *or* a Marketing Elective, but not both.

Organizational Behaviour and Personnel Group

Adviser: Professor Hendrix

1. GROUP DYNAMICS AND INTERPERSONAL RELATIONS 272-420 (3 credits)
2. STRATEGIES OF ORGANIZATIONAL DEVELOPMENT 272-421 (3 credits)
3. CREATIVITY, INNOVATIONS AND MANAGEMENT 272-422
4. SEMINAR IN ORGANIZATIONAL STRATEGY 276-465 (3 credits)
5. LEADERSHIP STYLE AND ORGANIZATIONAL STRESS 272-521 (3 credits)

6. PERSONNEL ADMINISTRATION 272-423 (3 credits)
7. SALARY ADMINISTRATION 272-425 (3 credits)
8. INTRODUCTION TO INDUSTRIAL RELATIONS 279-294 (3 credits)
9. COLLECTIVE BARGAINING 279-394 (3 credits)
10. INDUSTRIAL RELATIONS IN QUEBEC
11. **INDUSTRIAL SOCIOLOGY 166-312 (3 credits)
12. CONSUMER BEHAVIOUR 275-452 (3 credits)
13. MARKETING-RESEARCH 275-451 (3 credits)
14. *NATURE AND MEASUREMENT OF HUMAN ABILITIES 204-310 (6 credits)
15. *PSYCHOLOGICAL TESTS AND MEASUREMENT 204-406 (3 credits)

***Offered by the Psychology Department**
****Offered by the Sociology Department**

Students in this Group choosing Psychological Tests and Measurement and/or Nature and Measurement of Human Abilities will not be required to take Introductory Psychology, but should notify the course instructors that introductory Psychology has not, in fact, been taken.

Entrepreneurship, Corporate Policy and Smaller Business

Adviser: Professor Pugsley

The student takes the following four courses:

1. MANAGEMENT ACCOUNTING 271-313 (3 credits)
2. FINANCE II 274-342 (3 credits)
3. ENTREPRENEURSHIP AND CORPORATE POLICY 276-463 (3 credits)
4. SMALLER BUSINESS 276-464 (3 credits)

In addition, a total of six credits is chosen from among the following:

5. STRATEGIC PLANNING 276-466 (3 credits)
6. BUSINESS TAXATION 271-412 (3 credits)
7. SEMINAR IN ORGANIZATIONAL STRATEGY 276-465 (3 credits)
8. CREATIVITY, INNOVATION AND MANAGEMENT 272-422 (3 credits)
9. BUSINESS LAW 278-384 (6 credits)
10. SALES MANAGEMENT 275-455 (3 credits)
11. INTERNATIONAL MARKETING MANAGEMENT 278-483 (3 credits)
12. LEADERSHIP STYLE AND ORGANIZATIONAL STRESS 272-521 (3 credits)
13. BUSINESS IN SOCIETY 278-485 (3 credits)

(Note: If Entrepreneurship and Corporate Policy 276-463 is taken towards Secondary Core requirements, then the student must choose 9 credits from courses 5—13.)

The student is recommended to consider one or two approved economics courses among his electives.

Unlike the other groups which, by their names, suggest a relationship with particular professions or departments of sizeable corporations, this group is intended for the student who is inclined toward small business and the objective of hopefully coming to own such a business, with the rewards and hazards this usually involves. Because the group spans several areas rather than concentrating and examining in depth as the other group selections do, some measure of coordination is necessary. The student in this group therefore, may, depending on the other courses he has chosen, be required to do a project study in his final year on some particular small or medium-sized company or industry that consists mostly of small business units, and this project report will be supervised by the group adviser.

Management Science Group (Quantitative Methods)

Adviser: Professor Yalovsky

1. APPLIED DETERMINISTIC OPTIMIZATION 277-679 (3 credits)
2. APPLIED SEQUENTIAL OPTIMIZATION 277-680 (3 credits)
3. SIMULATION OF MANAGEMENT SYSTEMS 277-678 (3 credits)
4. SAMPLE SURVEY METHODS & ANALYSIS 277-632 (3 credits)
5. APPLIED MULTIVARIATE DATA ANALYSIS 277-676 (3 credits)
6. APPLIED TIME SERIES ANALYSIS FOR MANAGERIAL FORECASTING 277-675 (3 credits)
7. REGRESSION MODELS IN MANAGEMENT 277-634 (3 credits)
8. APPLIED DECISION ANALYSIS 277-633 (3 credits)
9. OPERATIONS MANAGEMENT 277-472 (3 credits)
10. TOPICS IN QUANTITATIVE ANALYSIS 277-471 (3 credits)
11. Courses in other DEPARTMENTS (up to 6 credits)

The student must choose a total of 18 credits from the above list. Students who want to acquire a better theoretical foundation in Quantitative Methods are urged to take courses in the Mathematics Department and the School of Computer Science. Students who want to follow a program of more applied studies are urged to consider courses 1-10. Courses 1-8 are currently offered jointly with MBA students in the Faculty. Students having an interest in applications of Quantitative Methods in fields allied with Management are encouraged to consider quantitative course selections in other Faculties such as Economics, Engineering, etc.

All courses selected from outside the Faculty should be chosen in consultation with the Group Adviser and with his formal approval. Students are encouraged to select courses for their non-Management electives which contribute to Quantitative Methods. For instance, a Major program in

Mathematics may be developed by students having an interest in a better preparation in Mathematics. Details of the Major requirements can be obtained from the Group Adviser.

Elective Courses in the Faculty of Management

NOTE: *Elective courses in a particular area always have as prerequisite that area's core courses (Core Course Descriptions section); students not in the Faculty of Management may ask permission of the instructor if they wish to have the prerequisite waived. Whenever other prerequisites exist they are listed.*

271-213. ACCOUNTING II. (3 credits) *(Prerequisite 280-211 or 280-212)* This course is intended for those who do not intend to become accounting specialists, but desire some further knowledge of the subject. The course will deal with accounting as an aid to Management in the planning and control of operations (Managerial Accounting).

271-311. FINANCIAL ACCOUNTING I. (3 credits) *(Prerequisite: 280—212 or permission of Instructor).* A detailed examination of the problems of measurement, recording and reporting of assets and related revenues and expenses.
Professor Marshall

271-312. FINANCIAL ACCOUNTING II. (3 credits) *(Prerequisite: 271-311).* A continuation of Financial Accounting I, examining problems of liabilities and owner's equity.
Professor Marshall

271-313. MANAGEMENT ACCOUNTING I. (3 credits) *(Prerequisite: 280-211 or 280-212).* Cost accounting, budgeting and budgetary control, standard costing, breakeven analysis, variable costing, costs for decision-making.
Professor Laybourn

271-411. ACCOUNTING THEORY. (3 credits). *(Prerequisite: 271-312).* The course will focus on developing a cohesive body of postulates which describe the discipline of accounting. A normative model (as opposed to positive) will provide the foundation for this endeavor.

271-412. BUSINESS TAXATION. (3 credits) *(Prerequisite: 271-312).* An examination of federal income tax and its impact on business operations. The material will cover the tax treatment of individuals, partnerships and corporations, and consideration will also be given to international aspects. Proposals for tax changes since the Carter Commission Report will be reviewed and emphasis will be placed on concepts underlying the most recent legislation.
Professor Laybourn

271-413. SYSTEMS AND AUDITING. (3 credits) *(Prerequisite: 271-312).* The principles of accounting systems design and auditing.
Professor Marshall

271-414. FINANCIAL ACCOUNTING III. (3 credits) *(Prerequisite: 271-312).* Advanced topics in financial accounting.

271-415. MANAGEMENT ACCOUNTING II. (3 credits) *(Prerequisite: 271-313).* A critical evaluation of accounting control systems and some related quantitative business controls. Conceptual and measurement problems in evaluating performance, including problems of decentralization. Control of the data-information flow.
Professor Amey

271-416. MANAGEMENT ACCOUNTING III. (3 credits) *(Prerequisite: 280-373).* A survey of planning and decision concepts and models with a view to specifying the relevant data or information for planning and a number of common classes of business decisions.
Professor Amey

272-420. GROUP DYNAMICS AND INTERPERSONAL RELATIONS. (3 credits). Students will explore theory, research, and applications relating to group dynamics in task-oriented groups. Students will increase their level of awareness of group dynamics and their skills at functioning in work groups. Teaching/learning methods will include lecture and discussion, learning cells, skill development exercises (role plays, video-tape analysis) and training laboratories (task group development and interpersonal sensitivity).
Professor Burnett

272-421. STRATEGIES OF ORGANIZATIONAL DEVELOPMENT. (3 credits). Organizational Development is a process of planned change in an organization's culture (i.e. the learned and shared assumptions about the norms that regulate member behaviour); a long-range effort to improve the organization's problem-solving and renewal processes — utilizing the applied behavioural sciences and experience based learning. Students will examine theory, strategies, and techniques of organizational diagnosis and intervention — and will interact with consultants from various Montreal and Canadian organizations as they present case studies of their on-going O.D. projects
Professor Hendrix

272-422. CREATIVITY, INNOVATION, AND MANAGEMENT. (3 credits). The course will deal with what we know about creativity, the process of innovation, the management of creativity, and the implications of innovation for modern management. The accent will be on studies of actual innovations, of creative individuals and organizations, interviews with creative managers, case studies and field studies. *(Not offered in 1976/77.)*
Professor Khandwalla

272-423. PERSONNEL ADMINISTRATION. (3 credits). This course is designed to introduce students to the various issues involved in personnel administration. The concepts and methods used by the staff personnel unit in building and maintaining

an effective work force in an industrial organization will be discussed. Topics include the development of the ability to design the personnel subsystem within the firm and the problems encountered in such areas as recruitment, selection, motivation, communication and management training. Both a theoretical and case approach will be used.

272-425. SALARY ADMINISTRATION. (3 credits). This course is designed to expose the students to total compensation systems in business and service organizations. The emphasis is on understanding the various compensation theories and their relation to compensation policies within organizations. Behavioural effects of different types of compensation plans and how to make compensation plans more effective with the use of behavioural science knowledge will be discussed. Some of the topics that are covered in the course are: nature of financial motivation, compensation theories, job design and job analysis, compensation practices, designing a compensation package, pay and organizational effectiveness.

272-521. LEADERSHIP STYLE AND ORGANIZATIONAL STRESS. (3 credits). This course tries to provide an analytic model of action in which the relationship will be emphasized (at a manifest and latent level) between an individual's leadership style, symptom formation and decision making processes in organizations. For that reason such themes will be emphasized as conceptual frameworks of human development, the relationship between psychopathology and leadership, and the nature of power, authority and motivation. Material will be mainly case studies, literature and historical studies of political and business leaders.
Professor Kets de Vries.

273-332. COMPUTER BASED INFORMATION SYSTEMS. (3 credits). Methodology, techniques and components of systems design and programming, with emphasis on management information systems.
Professors Bates and Smith

273-333. SYSTEMS ANALYSIS AND MODELLING. (3 credits). Theoretical approaches to systems analysis are investigated. Analytical, algorithmic and heuristic optimization methods are considered from the viewpoint of management decision-making. Emphasis is placed on developing programs to solve related problems.
Professor Howson

273-431. INFORMATION SYSTEMS DESIGN. (3 credits) *(Prerequisite: 273-332 and 273-333).* Methods and procedures of designing business information systems are discussed. A comprehensive case study extending throughout the term emphasizes the application of the methodology.
Professor Howson

273-432. INFORMATION SYSTEMS ADMINISTRATION. (3 credits) *(Prerequisite: 273-332).* This course is concerned with the management of the design and implementation of information systems. Systems to service functional requirements of the organization, concepts of total information systems will be considered. The case study method will be used.
Professor Smith

273-433. CONTROL AND VERIFICATION OF COMPUTER SYSTEMS. (3 credits). *(Prerequisites: 272-332; 273-431; 308-210)* The course will consider, at an advanced level, problems and methods of establishing effective controls of computer systems, evaluation of controls, and computer aids to evaluation and auditing.

273-434. ADVANCED TOPICS — COMPUTER SYSTEMS APPLICATIONS. (3 credits) *(Prerequisites: 273-332; 273-431; 308-210).* This is an advanced seminar for senior students. Topics will be selected from current issues such as data base applications, on-line systems, privacy and computers, etc.

274-342 FINANCE II. (3 credits) *(Prerequisite: 280-341; 280-272B).* A presentation of the modern theory of Finance. A foundation is established here from which students may pursue further specialization or from which specialists in other areas may appreciate their interaction with the Finance function. The theory covers three interrelated finance functions: capital budgeting, corporate finance (including cost of capital, capital structure, and dividend policy), and portfolio theory. An analytic approach is taken where objectives are specified, constraints recognised and the resource allocation of capital on both personal and corporate levels investigated.

274-441. INVESTMENTS AND PORTFOLIO MANAGEMENT. (3 credits) *(Prerequisites: 274-342).* The course examines the application of investment principles and security analysis to the selection and comparison of equity and fixed income securities in the current economic and financial environment. Also covered are: determinants of stock prices, growth models and portfolio diversification.
Mr. Ogilvie

274-442. CAPITAL MARKETS AND INSTITUTIONS. (3 credits). This course studies the functions of the capital market through flow of funds analysis and an examination of portfolio activities of financial intermediaries. Also covered are: Securities regulations and ethical considerations, the term structure of interest rates and risk and rates of return in debt and equity markets.
Mr. Ogilvie

274-443. APPLIED CORPORATE FINANCE. (3 credits) *(Prerequisites: 274-342).* Conceptual models and quantitative techniques studies in earlier courses are extended and/or applied to decision problems faced by managers in the

Corporate Finance areas. Such problems include the management of working capital, capital budgeting, capital rationing, capital structure, dividend policy, the cost of capital, mergers and acquisitions, leasing, option valuation, and insurance. The course is intended to enhance the ability of students to consider Corporate Finance problems in terms of conceptual models and applicable quantitative techniques.

274-444. INSURANCE AND RISK MANAGEMENT. (3 credits) *(Prerequisite: 274-342).* The aim of the course is to provide the student with a comprehensive view of the Insurance industry, linking both the actuarial and investment functions (liability generation and asset selection). Building on the theoretical foundations provided in Finance II, this course extends the concepts of utility theory and risk management, describes the function of the insurance industry and shows how portfolio theory can be applied to the industry's investment decisions. Finally, recent developments showing how the risk of assets and liabilities can be selected to minimize the overall risk for a given return are discussed.

275-351. MARKETING AND SOCIETY. (3 credits). This course stresses the meaningful differences between marketing as a business function and marketing as the social exchange process of a developed economy. The traditional decisions in the marketing area are examined but primarily in terms of the social issues and the social concerns associated with such decisions. Particular attention is paid to consumerism, government regulation of both pricing and advertising and the marketing functions in the non-profit organization.

Professor Shapiro

275-353. PHYSICAL DISTRIBUTION (3 credits). Systems approach to physical distribution; traffic management; plant and warehouse location; inventory control; information flows and order processing; supply scheduling; total cost planning; organizational patterns.

275-356. MARKETING EFFECTIVENESS. (3 credits). This course is designed to provide students with a working knowledge of how the tools of financial analysis and accounting control can be successfully employed to increase marketing profitability. Particular emphasis will be placed on the benefits of a contribution accounting approach, the more complex forms of breakeven analysis, sophisticated turn and earn calculations, return-on-investment within a marketing context, distribution cost accounting and control techniques revealing the marginal productivity of various forms of marketing effort.

275-357. MARKETING PLANNING I. (3 credits) *(Course is intended for final year students. Marketing Planning I is prerequisite to Marketing Planning II. However, student is not required to take Marketing Planning II).*

Marketing Planning is a two-part full year course, designed as a capstone to previous marketing courses providing a transition into actual business experience.

Marketing Planning I is a lecture seminar in which case histories, and later actual "live" problems are introduced into the class and "solved" with the help of the instructor.

Students "solve" similar problems assigned to them as home projects, to reinforce and measure learning.

It is assumed that each student has had sufficient marketing background to know where to find materials, data, etc., and what generally to be looking for. The course will emphasize judgement and initiative through assignments deliberately phrased in the vagueness of actual business problems that need to be *defined first,* then attacked in a logical and thorough manner, and finally recommendations or solutions proposed in full-scale "client" presentations.

275-358. MARKETING PLANNING II. (3 credits) *(Prerequisite: Marketing Planning I).* In Marketing Planning II the class operates as "McGill Marketing Enterprises" a marketing consultant company. The class is divided into "operating" groups of 3-5 students. Each operating group is assigned to an actual business project working with a client much the same as a marketing consultant or advertising company.

Classes are management review sessions where each group's problem and progress is monitored and controlled by the instructor and the class, again much as a marketing company's management reviews its operating groups.

The "solutions" are presented to the appropriate clients in full-scale business presentations in which the class attends as audience.

Emphasis is geared progressively in each of the courses toward real-life problems and practical solutions.

275-451. MARKETING RESEARCH. (3 credits). Problem definition, research design, collection of marketing information from primary, secondary and tertiary sources. Sample design; survey techniques; experimental design; coding and tabulating. Analysis of data, including statistical techniques. Marketing information systems. Product, distribution, motivation, sales, etc. research. Forecasting and planning; market research for marketing decisions. A termpaper (project) is required.

275-452. CONSUMER BEHAVIOUR. (3 credits). A study of basic factors influencing consumer behaviour. Attention is focused on psychological, sociological and economic variables including motivation, learning, attitude, personality, small groups, social class, demographic factors and culture, to analyze their effects on purchasing behaviour.

275-453. ADVERTISING MANAGEMENT. (3 credits). Surveys advertising and sales promotion in Canadian social, economic and management contexts. Examines activities as they relate to advertisers, the advertising agency, suppliers and media. Stresses advertising by objectives and the creative approach to developing strategy and tactics as part of the marketing concept.

275-455. SALES MANAGEMENT. (3 credits). This course explores the various responsibilities of the sales manager as they relate to his sales force. These include the selection process, training alternatives, compensation and incentive plans, supervision and evaluation, and budgeting and forecasting. Case studies, discussions of problems, and a field-work team project are used.

275-456. INDUSTRIAL MARKETING. (3 credits). This course focuses on decision-making and management of the marketing effort in an industrial product context. The student gains an understanding of the industrial marketing environment and of the problems faced by the industrial marketing manager. Topics covered include: the industrial marketing system; industrial purchasing; researching the industrial market; product, price distribution, selling and advertising decisions; strategies for industrial markets. A combination of lecture and case discussions are used.
Professor Cooper

275-457. ADVANCED TOPICS IN MARKETING RESEARCH. (3 credits) *(Prerequisite: 275-451).* The purpose of this course is to expose students to one or more of the following specialized areas in marketing research: (i) location studies, (ii) experimental design, and (iii) quantitative analysis of marketing data. Students will be required to design an actual study and to collect and analyze the data.

275-458. QUANTITATIVE ANALYSIS FOR MARKETING DECISIONS. (3 credits). Study the nature of market response by presenting models of market response and evaluate them in the context of understanding, describing and exploring marketing problems. Explore the particular marketing problem areas of advertising, pricing, personal selling and product planning. Relevant problems will be structured, analyzed and studied from a management science point of view. The interaction between each marketing variable will be considered. The problems of implementation of the management science approach in the real world of marketing organizations will be discussed.

275-459. RETAIL MANAGEMENT. (3 credits). Principles and methods of management as applied to retailing, including location, organization, personnel, buying, inventory control, selling and advertising, services, expenses and profits.

276-463. ENTREPRENEURSHIP AND CORPORATE POLICY. (3 credits). Selected business case problems embracing the top management viewpoint in medium-sized to larger-sized companies; sizing up situations; formulating policies and planning programs of action; organizing administrative personnel and putting plans into action; control, day-to-day administrative problems, follow-up and re-appraisal. Emphasis is on basic objectives, and how each department can contribute most efficiently to the overall aims of the firm.
Professor Pugsley

276-464. SMALLER BUSINESS. (3 credits) *(Prerequisite: 276-463).* Much the same kind of coverage as in Corporate Policy, but concerned specifically with Small Business, which has different problems — identification of initial opportunity, finance to get started, early survival, etc. — from the corporations in later stages of development considered in Corporate Policy.
Professor Pugsley

276-465. SEMINAR IN ORGANIZATIONAL STRATEGY. (3 credits). *(Open to U3 students only).* This course takes a careful look at the concept of strategy and how organizations go about making strategy. The course will run in seminar form and will revolve around a set of readings and a field project. Groups will study local organizations and write papers on their strategy — past, present and future.
Professor Balke

276-466. STRATEGIC PLANNING. (3 credits) *(Prerequisite: U3 only)* The course aims to provide the student with both pragmatic and theoretical bases for understanding and applying planning methodologies; demonstrating planning successes and failures; and indicating that although research proof is only gradually developing, sufficient hypotheses exist for testing the effectiveness of long-range planning.

276-565. BUSINESS IN SOCIETY I. (3 credits) *(Open to U3 students only).* An examination of the underlying ideals and beliefs of the traditional capitalist system; management styles and corporate policies and responsibilities that are compatible with the capitalist ideal; expressed criticisms and concerns about the existing system; traditional approaches, such as anti-trust laws, to making the systems more effective.

276-567. BUSINESS IN SOCIETY II. (3 credits) *(Open to U3 students only).* An examination of the emerging capitalist ideology; management styles and corporate policies and responsibilities that may be encompassed within the general framework of business morality (perceived as behaviour extending beyond the law, reflecting a level of aspiration rather than a level of duty); new approaches to making business more "responsive" to the needs of society.

277-471. SELECTED TOPICS IN QUANTITATIVE ANALYSIS. (3 credits). *Open to final year students with a strong background in quantitative methods.*

277-472. OPERATIONS MANAGEMENT. (3 credits) *(Prerequisite: 280-373).* This course takes the point of view of general managers, rather than specialists, on the structure and analysis of operating problems of departments of organizations. It consists of background readings and a series of class discussions of twenty-four cases. The cases present operational problems that concern general managers in a variety of types of organizations.

277-632. SAMPLE SURVEY METHODS AND ANALYSIS. (3 credits) *(Prerequisite: 280-272).* This course deals with the design of surveys and the analysis of survey data with particular emphasis on applications in management. Topics covered include: design of sample surveys, sampling procedures including simple random, stratified, systematic and unequal probability sampling; multistage and cluster sampling; judgment sampling; ratio and regression estimation; procedures for non-response and non-sampling errors; introduction to experimental methods and experimental design.

277-633. APPLIED DECISION ANALYSIS. (3 credits) *(Prerequisite: 280-272).* The course covers the canonical decision model; utility theory and preference and preference analysis including the expected utility axions, multiattribute utility functions, dominance principles, and methods of preference assessment; role of information in decision making including classical and Bayesian decision analysis, valuation of information and methods of probability assessment; group decision-making including group preference functions and topics from game theory; case applications of decision analysis to various areas of management.

277-634. REGRESSION MODELS IN MANAGEMENT. (3 credits) *(Prerequisite: 280-272).* This course deals with the applications of major econometric methods to management, with particular emphasis on finance, accounting, marketing and managerial economics. Each case or study is made up of theoretical hypotheses about the relationship, its statistical measurement and a judgment on its reliability. Topics covered include: tools for measuring statistical relationships, analysis of demand and cost-output relationships, price and profit models as well as multi-equation models. The course stresses the use of computer programs as an aid in management metrics.

277-675. APPLIED TIME SERIES ANALYSIS FOR MANAGERIAL FORECASTING. (3 credits) *(Prerequisite: 280-272).* This course is devoted to applications of time series analysis to business problems. Starting with the elementary ratio-to-moving average methods, the course deals successively with the Census 2 method, with the methodology introduced recently by Box and Jenkins, with spectral analysis and with time-series regression techniques. Computational aspects and management applications of the methodology are emphasized. The students are expected to participate by preparing and presenting case studies.

277-676. APPLIED MULTIVARIATE DATA ANALYSIS. (3 credits) *(Prerequisite: 280-272).* This course is devoted to the application of multivariate analysis to problems in Behavioural Science, Marketing, Economics and Finance. Computational aspects of the methodology are emphasized and the students will be expected to prepare and present actual cases. The following topics will be discussed: multiple regression and analysis, discriminant analysis, classification procedures, multidimensional scaling, cluster analysis.

277-678. SIMULATION OF MANAGEMENT SYSTEMS. (3 credits) *(Prerequisite: 280-272, 280-373).* This course is devoted to the methods and skills of building simulation models for Management Systems. It stresses the construction of useful models, the design of simulation experiments and the analysis of the results for making decisions. The students are expected to design a complete simulation of a real problem using a standard simulation language.

277-679. APPLIED DETERMINISTIC OPTIMIZATION. (3 credits) *(Prerequisite: 280-373).* Topics include Linear Programming and extensions to more general decision problems such as Quadratic and Non-Linear Models, Network Analysis, and models of discrete decision making. The course stresses the solution of complex management problems using efficient optimization tools of Operations Research. The students will work on real management cases to apply the techniques acquired.

277-680. APPLIED SEQUENTIAL OPTIMIZATION. (3 credits) *(Prerequisite: 277-679).* This course is devoted to the application of Dynamic Programming to a variety of decision-making contexts, both in deterministic and probabilistic environments. Topics include Dynamic Inventory Scheduling with uncertain demand, unbounded horizon problems, problems in replacement and maintenance, etc...

278-381. MANAGEMENT IN THE PUBLIC SECTOR I. (3 credits). Management in the Public Sector is a course on decision making in the public sector. It stresses the analysis of the executive decision making structure of the government and the processes for policy development and decision making. It also stresses the interface between the public sector and the private sector.

278-382. INTRODUCTION TO INTERNATIONAL BUSINESS. (3 credits). The course seeks to familiarize the management student with the expanded world of the international businessman by examining the underlying concepts of international economic theory; developing a framework for examining country environmental constraints (educational, sociological, economic, political-legal) and relating them to the operations of multinational enterprise; studying the relationship between the international firm and the nation

state, with particular reference to Canadian foreign ownership policies; and examining selected topics such as the role of multinational enterprise in economic development and planned economies.
Professor R.W. Wright

278-383. INTERNATIONAL BUSINESS POLICY. (3 credits). *(Prerequisite: 278-382).* This course develops and applies conceptual approaches to general management policy and strategy formulation in multinational enterprises. Attention is focussed first on the strategic planning process. The various aspects of management policy studied included marketing strategy, location strategy, technology transfer, labour policy, ownership strategy and planning for international divestment. Emphasis is placed also on developing the students practical skill using case studies and negotiating international business arrangements.
Professor G. P. LeRoy

278-384D. BUSINESS LAW. (6 credits). Topics cover the meaning, classification and sources of law. Civil Law versus Common Law, other systems, Procedural Law, Contracts, protection of creditors, Breach of Contract, Special Contracts, Leases, Mandates, Loans Guarantees, Pledges, Proprietorship, Partnerships, Corporations, Government Regulation of Business, Labour Management Relations, Insurance and Bankruptcy, Patents, Negotiable Instruments, Property and Taxation.
Mr. Audet

278-385B. MANAGEMENT IN THE PUBLIC SECTOR II. (3 credits). *(Prerequisite: 278-381.)* This course will stress decision-making in the public sector. In particular, it will look at the structures of decision making in the government at the Cabinet, Departmental and Regulatory Agency levels. Particular stress will be placed upon a simulation project based around a current problem.

278-386. COMMUNICATIONS. (3 credits). This course will be both theoretical and practical. The theory will relate to how people deal with other people in organizations involving encoding, transmission, receiving and decoding of messages. It will examine the knowledge, skills, attitudes and habits that are used in reading, writing, speaking and listening as well as nonverbal communications. It will analyse how to think clearly, and the theory of General Semantics. Students will study leadership skills in chairing a meeting. It will examine writing skills in detail.
Professor Robertson

278-482. INTERNATIONAL FINANCIAL MANAGEMENT. (3 credits) *(Prerequisites: 280-341).* This course examines operational problems of financial management in the multinational enterprise: forecasting adversities in the international financial environment; determining the firm's exposure to foreign exchange rate changes; protecting against exchange losses; transfer pricing and profit remittance policies; multinational capital budgeting; use of Eurodollar and overseas sources of capital; consolidation of financial statements; etc.
Professor R.W. Wright

278-483. INTERNATIONAL MARKETING MANAGEMENT. (3 credits). An examination of the opportunities and constraints that confront the marketing manager of a firm seeking to extend its activities across national boundaries and into foreign markets. The world market environment is viewed as one composed of diverse and complex elements linked by unifying trends that reward an integrated international marketing approach. Considered in turn are the modifications in product, pricing, channel and communications policies that must be made when a firm enters foreign markets either through exporting, licensing, or manufacturing abroad. Particular attention is paid to the strategic and tactical aspects of international trade and export marketing in the Canadian context.
Professor G.P. LeRoy

278-484. INTERMEDIATE BUSINESS LAW. (3 credits) *(Prerequisite: 278-384).* Purpose is to provide an overview of certain legal corporate principles management students should be aware of and understand. However, emphasis will be on legal requirements of corporate organization and various methods of corporate financing. Course will cover: Outline of basic principles of Canadian Company Law, with quick study of Federal and Quebec Company legislation; analysis of legal requirements of corporate financing including brief study of securities legislation and a prospectus.

278-489. INDEPENDENT STUDIES IN MANAGEMENT. (3 credits) *(Open to U3 students only).* Research, reading or field projects, permitting independent study under the guidance of a staff member specializing in the field of interest. Projects have to be arranged individually with instructors. A detailed student proposal must be submitted to the instructor and the Associate Dean during the second week of term. CGPA of at least 3.0 required.

492-437. COMPARATIVE COMPANY LAW AND THE MULTINATIONAL COMPANY. (3 credits) *(Open to undergraduates by permission of the instructor.* No prior law courses are required.) This course provides a multidisciplinary overview of the relationship between law, economics, and management, with particular reference to the multinational corporation. The course deals on a comparative basis with the legal concept of a corporation, the objectives of multinational corporate management, the economic effects of international corporate activity, and alternative governmental approaches toward control of multinational firms. Emphasis is placed on the multinational corporation in the European Economic Community and on the relevance of EEC law and economics to Canada.
Professor H.R. Hahlo
(Offered by the Faculty of Law)

279-294. INTRODUCTION TO INDUSTRIAL RELATIONS. (3 credits). An introduction to the problems of labour-management relations, the structure, function and government of labour unions, labour legislation, the collective bargaining process, and the public interest in industrial relations.
Professor Bairstow

279-393. LABOUR RELATIONS IN QUEBEC. (3 credits) *(Prerequisite: 279-294).* Students in this course will study the evolution of industrial relations policy and practice in Quebec against the background of the rather unique socio-cultural, economic and political climate that has characterized this province at various stages of its industrial development. In addition to providing a historical perspective, the course will emphasize contemporary events and problems. The latter will form the primary subject matter of student research projects.
Professor Goldenberg

279-394. COLLECTIVE BARGAINING. (3 credits). *(Prerequisite: 279-294).* This course is designed for those students who wish to study principles in collective bargaining in Canada and abroad. It deals with the structure of the bargaining parties and the structure of bargaining itself. It is problem-oriented and relies on empirical data and case problems.
Professor Bairstow

279-491. INDUSTRIAL RELATIONS IN PRACTICE. (6 credits). *(Prerequisite: 279-294).* The object of this course is to give the students an opportunity to apply the knowledge that they have gained in their Industrial Relations Program. Students will be encouraged to come to grips with a wide range of problems in industrial relations theory, policy and practice. This is achieved by means of guided reading and small discussion groups, mock collective bargaining sessions, contact with practitioners in the field and problem-oriented research assignments. (Compulsory for Final Year Industrial Relations Majors. Others by permission of the instructor.)
Professor Goldenberg

279-492. PUBLIC POLICY IN INDUSTRIAL RELATIONS. (6 credits). *(Prerequisite: 279-294).* Collective bargaining and public policy towards industrial relations. Emphasis is placed on recent public investigations into labour relations in the federal and provincial jurisdictions; international comparisons are included.
Professor Woods

279-493. LABOUR AND INDUSTRIAL RELATIONS THEORY. (3 credits). *(Prerequisite: 279-294).* The objective of this course is to provide students with background understanding of modern industrial relations systems and perspective with regard to the nature of the labour movement. The course will be concerned with the history of thought regarding the labour movement during the last two centuries. Changes in economic and social institutions will be examined as part of the evolving context within which the labour movement has developed. Central to the course will be the conflicting theories which have emerged to explain the development of labour's economic and political institutions.
Professor Woods

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The University reserves the right to make changes without prior notice to the information contained in this publication, including the alteration of various fees schedules and the revision or cancellation of particular courses.

Students intending to seek membership in a professional corporation in Quebec are reminded that after July 1, 1976 they will be required to show that they possess a working knowledge of the French language, in conformity with the requirements of the Professional Code (Bill 250) and the Official Language Act (Bill 22).

Faculty of

Medicine

1976-77

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* The official McGill University mailing address is:
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Assistant Professors — A.W. CHAWLA, L. GLASS, P. KONGSHAVN, K. LUKOWIAK, P. NOBLE, S. POTASHNER, P. WELDON, R.L. WILLIAMS

Lecturer — M. HAZUCHA

Associated Members — N.R. ANTHONISEN *(Medicine)*, B.A. COOPER *(Medicine)*, R.F.P. CRONIN *(Medicine)*, B. DUBROVSKY *(Psychiatry)*, E. FALLEN *(Medicine)*, H.L. GOLDSMITH *(Medicine)*, C.A. GORESKY *(Medicine)*, P.T. MACKLEM *(Medicine)*, M. McKENZIE *(Medicine)*, M.M. MORRIS *(Anesthesia)*, D.H. MOSCOVITCH *(Otolaryngology)*, T. NUBSCHER *(Pediatrics)*, J.F. SEELY *(Medicine)*

Psychiatry

Professors M. DONGIER *(Chairman)*, M.K. BIRMINGHAM, H. CAPLAN, H. KRAVITZ, H.E. LEHMANN, A.W. MacLEOD, R.B. MALMO, A.M. MANN, H.B.M. MURPHY, T.L. SOURKES

Associate Professors — J.V. ANANTHARAMAIAH, F. AZIMA, T.A. BAN, B.M. CORMIER, I.S. DISHER, B.O. DUBROVSKY, P.G. EDGELL, W.D. ENGELS, F. ENGELSMANN, R.B. FELDMAN, B.A. GIBBARD, B. GRAD, L. GRATTON, L.G. HISEY, E.P. LESTER, J.G. LOHRENZ, F.W. LUNDELL, A.S. MacPHERSON, D.J. McCLURE, H.F. MULLER, J. NAIMAN, J.C. NEGRETE, R. PITTENGER, E.G. POSER, R.H. PRINCE, J.J. SIGAL, L. SOLYOM, J.R. UNWIN, G. WEISS

Assistant Professors — N.R. ALDOUS, M.M. AMIN, C.C.J. ANGLIKER, S. BARZA, J. BEAUBIEN, P.R. BECK, C. BOS, C. CAHILL, C.H. CAHN, J. CUMBERLAND, H. DAVANLOO, E.G. DEBBANE, S. DONGIER-MONTAGNAC, S.Z. DUDEK, F. FENTON, H. GRAUER, H.A. GUTTMAN, G.P. HARNOIS, B.R. HUNT, S. LAL, A.P.N. LEE, D.C. LEVIN, E.D. LEVINSON, G.J. MAGUIRE, G.F. MORGENSTERN, E. NALTCHAYAN, G. PETERFY, D. PIVNICKI, R.A. RAMSAY, C.C. SMITH, S. STEIN, G.C. TAYLOR, G. TURCOT, L. VACAFLOR, S. WILNER, N. WISEBORD, C. YUNG

Lecturers — E.H. ACHONG, R. ARBITMAN, K. ARVANITAKIS, H. AST, A. BARTOVA, S. BAYRAKAL, P.S. BELIVEAU, C. BENIERAKIS, S. BIKADOROFF, L. BUFFETT, P.B. CAMPBELL, S. CAMPBELL, A.J. CARRE, M. CERROLAZA, G. CHOUINARD, J.D. CUTHILL, L. DEMERS-DESROSIERS, H.A. EVANS, H. FREEDMAN, P. GAGNON, J. GARANT, K. GEAGEA, L. GOMEZ, P. GREGOIRE, L. GUERETTE, A. HAUSFATHER, L. HECHTMAN, L. HUAPAYA, R. KACHANOFF, R.A. KELLER, R. KIRIAKOS, T. KOLIVAKIS, I. KRAULIS, F.E. KRISTOF, D.J. KUSSIN, C. LAROCHE, G. LAROCHELLE, J. LEVY, G. LOW, Mrs. H.P. MALMO, S.A. MARTIN, A.F. MESZAROS, R.C. MONKS, A.K. MULLER, N.P.V. NAIR, D.P. NOWLIS, J. PARIS, J.C. PECKNOLD, I. REBNER, B.M. ROBERTSON, M.M. ROMER, P. ROPER, J.F. RUIZ-NAVARRO, M.G. SALIB, P.D. SCULLY, R.W. SHEPHERD, S.P. SIMONS, F.A. SMITH, R.M. SMITH, A.A. SURKIS, G. TAHTA, D.S.C. TSANG, D.J. WOOD, S.N. YOUND, P. ZUARDI

Demonstrators — E. ABDELMALEK, S. ANG, P. ASSALIAN, C. BARRIGA, A.O. BARRON, J. BENAROYA, J. BEAUDRY-REMILLARD, C. BERNARD, A. BESZTERCZEY, J.J. BOURQUE, E.J. BRAHM, J. CANFIELD, H. CVEJIC, J.L. DeRIVERA, D.F. FRANK, S.C. GAITE, J.P. GAMACHE, C. GOLDEN, G. GREGORIOU, K. JIMENEZ, R. LAKOFF, G.W. MacLEAN, M.R. MacFARLANE, Mrs. K. MISSALA, J.P. NOONAN, R. OLIVEROS, R.M. RICHARD-JODOIN, N. ROGERS, G. ROSENBERG, C. VILLENEUVE, R. YASSA, G. ZIMMERMAN

Associated Members:
Associate Professors — J.A. CORSON, V.A. KRAL

Diagnostic Radiology

Professors — R.G. FRASER *(Chairman)*, J. FABRIKANT

Associate Professors — W.J. ALEXANDER, W.P. BUTT, R. ETHIER, P.A. FARRER, B.D. FLETCHER, R.O. HILL, M.B. NOGRADY, M.J. PALAYEW, L. ROSENTHALL, I. SEDLEZKY, G.B. SKINNER, F. WINSBERG

Assistant Professors — F.M. BOSTON, C.M. COLE-BEUGLET, P.J. FITZGERALD, J.H. GAGNON, F.A. GRAINGER, B.B. HALE, M.J. HERBA, N.A. KHAN, D. MELANCON, A.D. ROTENBERG, S. SAHA, V. SAYEGH, R.E. WILSON

Lecturers — V. ADRENYI, A. ARZOUMANIAN, G. BELANGER, F. BOURDON-CONACHIE, J.D. CHAN, M. DESAULNIERS, J.M. DUMAS, A.D. FRENCH, A. GLAY, M. GOLDENBERG, R.E. HANSON, R.S. HIDVEGI, B.B. HYAMS, S. JEQUIER, D.A. KILLAM, R. KIMOFF, P. LANDER, R. LESPERANCE, W. LIGHT, A. LISBONA, J. LUSSIER-LAZAROFF, A. NAIMARK, M.S. NATHENS, M. O'DONOVAN, M.F. PINSKY, H. REMY, M. ROSENBLOOM, S.S. SHARE, D.N. SHUSTER, R.L. SLATKOFF, J.W. SPRAGGE, L.A. STEIN, J. TOTH, M. USHER, R.L. WEE, S.D. WEISBAUM, G. WHITEMAN

Demonstrators — M.F. GRAHAM, A.H. LATOUR, R. LISBONA, D.R. PATTON, S. TAYLOR

Instructor — G.A. WILKINSON

Associated Member — J.C. HOGG

Therapeutic Radiology

Professors — J.H. WEBSTER *(Chairman)*, M. COHEN

Associate Professors — P.A. FARRER, J.J. HAZEL, T.N. ROMAN

Assistant Professors — P. DEL VECCHIO, J.F. GUERRA, T.H. KIM, S.M. LEHNERT, E.B. PODGORSAK

Lecturers — E.P. CYTACKI, G. DOYLE, C. GRAVELINE

Demonstrator — Mr. F. BEHMANN

Surgery

Professors — A.G. THOMPSON *(Chairman)*, L.G. HAMPSON, L.D. MacLEAN, D.R. MURPHY, F.M. WOOLHOUSE

Associate Professors — H.E. BEARDMORE, N. BELLIVEAU, M.A. ENTIN, R.L. ESTRADA, R.D. GUTTMAN, E.J. HINCHEY, G.M KARN, D.T.W. LIN, R.C. LONG, P. MANSELL, A.P.H. McLEAN, R.D. MIDGLEY, E.D. MONAGHAN, J.R. MOORE, P.H. NILOFF, W.L. OGILVY, H.F. OWEN, J.D. PALMER, H.R. SHIBATA, I. SHRAGOVITCH, E.J. TABAH, H.B. WILLIAMS

Assistant Professors — J.G. BEAUDOIN, H.C. BROWN, R.A. BROWN, A.M. CLOUTIER, J.C. DICKISON, R.G.W. GOODALL, A.E.N. GRACE,

F. GUTTMAN, H. HIMAL, A. HRENO, R.N. LAWSON, G.W. LEHMAN, R.T. LEWIS, W.C. LLOYD-SMITH, J.K. MacFARLANE, G.G. MACKIE, R.G. MARGOLESE, B. MARIEN, K.G. McCULLOCH, J.L. MEAKINS, D.W. RUDDICK, G. SCHWARZ, I. SHANFIELD, N.M. SHEINER, H. SHIZGAL, H.H. SIGMAN, M. THIRLWELL, B.L. THOMPSON, M. WEXLER

Lecturers — C.M. ALLAN, M.S. CHUGHTAI, P. COHEN, G.A. DANIEL, A.N. FREEDMAN, L.G. GENENDER, E. JOMM, A.M. LEGARE, P. MADORE, H.W. MERRICK, G.S. MODE, R.V. MORALEJO, J.J. OSTAPOVITCH, D.R. OWEN, D.F. PAPICH, G.J. PEARL, A.S. POPIERAITIS, F.L. SIMON, H.D. STEVENS, T. TY, F.M. WIEGAND, S.A. YOUSSEF

Associated Members — F.N. GURD, H.R. ROBERTSON

Division of Cardiovascular and Thoracic Surgery

Professors — A.R.C. DOBELL, H.J. SCOTT
Associate Professors — J. MORIN, D.D. MUNRO
Assistant Professors — P.E. BLUNDELL, C.J. CHIU, D.S. MULDER, J.F SYMES, J.A.S. WILSON
Lecturer — N. POIRIER

Division of Surgical Research

Professors — L.D. MacLEAN, D.R. MURPHY, A.G. THOMPSON
Associate Professors — D.M. EDWARD, J. GORDON, E.J. HINCHEY, S.C. SKORYNA
Assistant Professors — A.M. DANIEL, E. DELVIN, A.G. FAZEKAS, F. GLORIEUX, H. HIMAL, C.A. LAURIN, A.H. McARDLE, W.M. MERSEREAU, A.R. POOLE, Y. TANAKA
Lecturers — L. GREENBERG, C. PIERCE, M. VAN DER REST

Division of Orthopedic Surgery

Professor — R.L. CRUESS
Associate Professors — R.B. GLEDHILL, J.M. McINTYRE, J.E. MILLER, N. MITCHELL, E.C. PERCY, J.G. PETRIE
Assistant Professors — C.E. BROOKS, D.L. BURKE, L.B. CONOCHIE, D.S. DRUMMOND, F.A.H. GREENWOOD, D.A. MacKENZIE, G.R. MURPHY, W.R.J. RENNIE, E. ROGALA, M.A. ROSMAN, J.L. SHUGAR, J. TEMPLETON, R.G. TOWNSEND, C.L. WILSON, W.E. WILSON
Lecturers — A.A. BUTLER, B.J. COSTELLO, D.R. FORBES, L. HELLER, T.S. MEARS, J.D. SULLIVAN
Demonstrators — H.I. DUBOW, P. DUBRAVCIK, L. GREEN, H.F. HELMY, G. SELIGMAN, T.N. SILLER

Division of Urology

Professor — K.J. MacKINNON
Associate Professors — B.M.M. MOUNT, E.C. REID
Assistant Professors — C.F.D. ACKMAN, J.W. FOOTE, M. LAPLANTE, W.F. LINGARD, D.D. MOREHOUSE, J.OH, J.A. OLIVER, Y. TAGUCHI
Lecturers — I.J. de DOMINICO, S.A. JACOBSON, S.G. MacISAAC, T. NEARING, H.H. RABINOVITCH, H.A. ROTTENBERG
Demonstrator — N. HALPERN

2 GENERAL INFORMATION

The one hundred and forty-fourth session of the Faculty will open on September 1,1976.

Separate Announcements are available for the School of Physical and Occupational Therapy, and the School of Nursing.

2.1 BUILDINGS

McIntyre Medical Sciences Building

This building contains the administrative offices of the Faculty of Medicine, the Medical Library, the Osler Library of the History of Medicine, the Departments of Biochemistry, History of Medicine, Pharmacology and Therapeutics and Physiology, the McIntyre Animal Center and a number of special research units (e.g., Anesthesia Research, Aviation Medical Research, Biomedical Engineering, and the Cancer Research Unit).

Strathcona Anatomy and Dentistry Building

This building houses the Department of Anatomy, the Faculty of Dentistry and the Protein and Polypeptide Laboratory of the Department of Experimental Medicine.

Pathology Building

Opened for use in October 1924, the building is situated on the north-east corner of University Street and Pine Avenue, adjacent to the Montreal Neurological Hospital and the Royal Victoria Hospital. It is occupied by the Departments of Microbiology and Immunology, Epidemiology and Health, and Pathology. The building has extensive facilities for teaching, research and diagnosis, including the interdisciplinary Meakins-Christie Laboratories which opened in August 1972.

The Montreal Neurological Hospital and the Montreal Neurological Institute

The Hospital and Institute are housed in an eight-storey building, situated on University property adjacent to the Pathology Institute and the Royal Victoria Hospital. The Institute was opened on September 27, 1934 and as the cornerstone states is "Dedicated to relief of sickness and pain and to the study of Neurology." The McConnell Wing was opened in 1953, doubling both the clinical and laboratory space. Originally the Institute assumed the

responsibility for the undergraduate and graduate teaching of neurology, neurosurgery and the neuro-sciences in the Faculty of Medicine at McGill. In 1963 the Montreal Neurological Hospital was incorporated as a separate institution. The Hospital and Institute therefore have three areas of responsibility: clinical, research and teaching. In addition to wards, operating rooms and laboratories for treatment and study of diseases of the nervous system, the building provides facilities for graduate study and research in related basic science fields. An extension of 70,000 sq. ft., to be called the Wilder Penfield Wing, has been approved for construction to begin in January 1976. This will provide modern patient areas, operating suite and intensive care unit, together with enlargement of research and teaching areas.

Allan Memorial Institute

In 1943 a large building and site were donated as a basis for the development of an institute of psychiatry. The building was reconstructed to permit the establishment of a fifty-bed unit, together with extensive research laboratories, and was officially opened on July 12, 1944.

In 1946 the first day-hospital in the world was opened at the Institute and in 1953 a fifty-bed wing was added.

A research and training building was added by McGill University in 1963, providing one of the most extensive and modern research areas.

Both undergraduate and postgraduate teaching are carried on at the Institute.

Donner Building

The Donner Building for Medical Research, adjacent to the Strathcona Anatomy and Dentistry Building, was completed in September 1948. Through the generosity of William D. Donner of Philadelphia, the late founder of the International Cancer Research Foundation, the necessary funds were provided for the construction of a building entirely devoted to medical research.

The building houses the Maxwell Lauterman Laboratories for Surgical Research, and also provides facilities for many other types of medical and surgical investigation.

Meredith Building

Situated at 1110 Pine Avenue West, this building currently houses the Center for Medical Education, Continuing Medical Education, the McGill Clinical Scholars' Program, the Montreal Joint Hospital Institute and the Associate Dean's Office (Community Medicine).

2.2 HOSPITALS

McGill University Teaching Hospitals

There are four McGill University Teaching Hospitals. By agreement and tradition the administration, medical staff and scientific personnel of these institutions are closely integrated with McGill University and form the basis for the clinical departments of the Faculty of Medicine:

Royal Victoria Hospital
The Montreal General Hospital
The Montreal Children's Hospital
Montreal Neurological Hospital and Institute

The Royal Victoria Hospital comprises the following units under one administration:

1. Main Pavilion
2. Medical Pavilion
3. Surgical Pavilion
4. Ross Memorial Pavilion
5. Women's Pavilion
6. Allan Memorial Institute

The total bed complement is 977. Admissions total about 22,000 a year and there are more than 260,000 visits annually to the Outpatient Department. The resident and intern staff numbers 319.

The Royal Victoria Hospital was granted its Charter in 1887. The Pathological Institute and the Women's Pavilion of the Royal Victoria Hospital were opened in 1926 and the Allan Memorial Institute (Psychiatric Pavilion) became part of the hospital complex in the 1940's.

The Montreal General Hospital has a bed complement of 900 for the treatment of acute diseases. In a typical year, there are approximately 20,000 admissions and 200,000 consultations in the Emergency and Outpatient Departments. The Resident and Intern staff numbers 275. "The Montreal General" was founded in 1821 and its record in clinical teaching is one of the longest in North America. Students were first received in 1823, in what was the first medical school in Canada. This school agreed to form the Faculty of Medicine in 1829.

The present Hospital was opened in 1955. In addition, a five-storey Research Building was opened on Hospital grounds in late 1973.

The Montreal Children's Hospital located on Tupper Street near the Atwater Metro Station, has 300 beds and, in a typical year, admits 12,000 patients. The Ambulatory Services have approximately 200,000 visits, 60,000 in Emergency and 140,000 in the clinics. The hospital admits newborn infants, children and adolescents with all kinds of medical and surgical problems.

The Alexandra Pavilion (formerly the Alexandra Hospital) is now part of The Montreal Children's Hospital and is a centre for diagnostic assessment and treatment programs for retarded children and other programs in developmental medicine.

An active teaching program is maintained for the medical students and for the 125 interns and residents. There are also teaching programs for nursing students and other health professionals. The McGill University-Montreal Children's Hospital *Research Institute* is located in the hospital, and sponsors research and postgraduate education in disciplines related to problems of childhood.

The Montreal Neurological Hospital at 3801 University Street, provides neurological and neurosurgical services for the Royal Victoria Hospital. It is, however, a completely independent hospital with its own corporation and Board of Directors. There are 135 beds, including a pediatric unit, providing for the care and investigation of patients with organic diseases of the nervous system. In 1974, 782 operations were performed. *The Montreal Neurological Institute* houses the Department of Neurology and Neurosurgery for McGill University and is responsible for undergraduate and graduate teaching. Research is carried out with superb equipment and highly qualified staff.

Specialty Teaching Hospitals

The following hospitals are affiliated with the McGill University Faculty of Medicine. All the departments and services of these hospitals participate in teaching and research in a single specialty:

Douglas Hospital
The Montreal Chest Hospital Centre

Douglas Hospital was opened in 1890 as centre for the specialized care of mental illness of short and long term duration. There are facilities for children, adolescents, adults and elderly patients. Services are offered as part of an integrated network of psychiatric services, in cooperation with various departments of psychiatry of general hospitals. There is a comprehensive community psychiatric program offered to residents of Ville Emard, Ville LaSalle, Verdun, Pointe St-Charles. There are approximately 1,130 admissions per year and 18,200 visits at the out-patient clinics per year.

The hospital provides clinical instruction and training for residents in psychiatry and in pediatrics, as well as medical students and students of various paramedical disciplines. Experience can also be obtained in research through the activities of the Research Department of the hospital.

The Montreal Chest Hospital Centre is a McGill teaching, training and research specialty hospital, for all diseases of the chest, excluding the heart and great vessels. It operates on an out-patient and in-patient basis including a large general chest and tuberculosis clinic. The hospital contains 124 beds and its facilities include operating rooms, general, special and research laboratories, fully equipped pulmonary function laboratories, physiotherapy, and all para-medical allied services.

The hospital provides some specialized programs and services which include a home care program, adult cystic fibrosis clinic, anti-smoking program, out-patient rehabilitation program for respiratory insufficiency, Center for PHAGE typing and identification of atypical mycobacteria for the Province of Quebec, Revised Comprehensive Tuberculosis Program and special emphasis on the present challenge of lung cancer. It maintains an active research program and is fully approved by the Royal College of Physicians and Surgeons of Canada for residency training programs in both medicine and surgery. Residency rotating appointments number approximately 30 annually.

Hospitals Affiliated with McGill University

The following hospitals have been approved and have contracted with McGill University for participation in teaching and research in one or more departments and services:

Jewish General Hospital
The Lakeshore General Hospital
Queen Elizabeth Hospital of Montreal
Queen Mary Veterans' Hospital
Reddy Memorial Hospital
St. Mary's Hospital
Shriners' Hospital for Crippled Children

2.3 LIBRARIES

Medical Library

Life Sciences Area Librarian — FRANCES K. GROEN
Assistant Area Librarian — DAVID S. CRAWFORD

The Medical Library is located on the second, third and fourth floors of the McIntyre Medical Sciences Building; the entrance is on the third floor.

The Library is open from mid-September to mid-June from 8:30 a.m. to midnight Monday to Friday, from 8:30 to 5:00 p.m. on Saturday and 1:00 p.m. to 5:00 p.m. on Sunday. During the summer months and at Christmas, the hours are restricted but notification of these changes is posted well in advance.

The Library is open to all who need to use its collections. Borrowing privileges are given to McGill faculty, staff and graduate students, all students in the Faculties of Medicine and Dentistry and to undergraduates whose course-work requires its use. Borrowing privileges are also extended to members of the health professions in the community.

Reference librarians are available to answer reference questions, to help with the use of the card catalogue, reference books and indexes and to assist in the compilation of bibliographies. On-

line bibliographic searches of MEDLINE and associated data bases are available in the Reference Department and the staff can obtain access to the off-line data bases of the National Science and National Libraries. An audio-visual guide to the Library and audio-tapes on the use of specific abstracting and indexing tools are available in the Reference Department.

One of the strengths of the Library is its journal collection. Of the more than 143,000 items held, over 98,000 are bound journal volumes, and over 2,200 titles are currently received. The book collection is particularly outstanding in the area of ophthalmology, due in large measure, to gifts from the late Dr. Casey A. Wood. There are also collections of books and journals in many departments of the Faculty.

Osler Library of the History of Medicine

The two-storey wing extending out from the third and fourth floors of the McIntyre Medical Sciences Building is the Osler Library, entirely devoted to the medical-historical collection. Besides library offices and stack space, the Library consists of two reading rooms, the Wellcome Camera, accessible through the main Reading area of the Medical Library on the third floor, and the Osler Room beyond the Camera.

The collection, consisting of about 30,000 volumes in the history of medicine and its sciences, has, as a nucleus, the 8,000 volumes bequeathed to McGill by one of its most famous pupils and teachers, Sir William Osler. It is especially this portion which is rich in 15th, 16th, 17th, and 18th century medical books. In addition, all books printed before 1850 have been transferred from the Medical Library to this collection. The rest of the collection has been purchased by the Osler Library itself, especially since 1957, when a generous grant from the Wellcome Trust made active growth of the Library possible. The Library is constantly adding to the collection, especially current work in the history of medicine.

All books in the collection are available for use within the Library and the vast majority of them are available on loan. Undergraduates and all interested persons may use the Library. For the holdings of the Library, users are urged to consult the card catalogue, and the book catalogue entitled *Bibliotheca Osleriana;* both are in the Wellcome Camera. At present, the collection is not completely catalogued anywhere else in the University.

2.4 MEDICAL SOCIETIES

McGill Medical Students' Society

The Society is an association of all registered medical students. Acting through its elected council and various Faculty committees, the Society performs a number of functions:

1) To represent medical students' ideas, concerns, and problems to the Faculty of Medicine, the government, and the public at large.
2) To promote interaction among the medical students of the province through the newly formed Féderation des Associations des Etudiants (es) en Médecine du Québec.
3) To attempt to advance new forms of learning to meet with the desires of the students.
4) To collaborate with the Students' Societies of Nursing and Physical & Occupational Therapy in running the "Annex", our new social centre.
5) To regulate all student sporting and social events within the Faculty.
6) To generally attempt to provide the resources and personnel to meet student needs and wishes as they arise.

Of the many things presently occurring under the auspices of the M.S.S., some of the more interesting are the McGill Medical Journal, the new Women in Medicine Group, and a new French course for students in second year. The M.S.S. has members on many faculty committees, including the Curriculum Committee. Details of all our activities are easily available from the M.S.S. Office and it is hoped that all students will participate in the Society's activities.

La SOCIETE est une association de tous les étudiants inscrits en médecine. Représentée par son conseil élu et par les divers comités de la faculté, la SOCIETE accomplit les fonctions suivantes:

1) représente les idées des étudiants, leurs soucis et leurs problèmes à la faculté de médecine, au gouvernement et au public en général,
2) facilite la communication des étudiants en médecine de la province par le moyen de la Féderation des Associations des étudiants (es) en médecine du Québec qui a été nouvellement formée,
3) elle essaye de développer de nouveaux cours qui rencontreront les désirs des étudiants,
4) de collaborer avec les étudiants (es) de la Société des infirmières ainsi qu'avec la société d'ergothérapie et de réadaptation dans la direction de "l'Annexe", notre nouveau centre social,
5) s'occupe de régler toutes les réunions sportives ou sociales des étudiants en médecine,
6) de façon générale, essayer de fournir toutes les ressources et le personnel afin de rencontrer les besoins et les désirs des étudiants qui se font ressentir.

De toutes les choses qui se produisent sous les auspices de la Société des étudiants en médecine, celles qui sont les plus intéressantes sont: le journal médical de McGill, la création d'un nouveau groupe "Les Femmes en Médecine" et un nouveau cours de français pour les étudiants en deuxième année de médecine. La Société des étudiants en médecine compte des membres sur plusieurs comités de la faculté y compris le "Curriculum Committee". Les détails de toutes nos activités peuvent facile-

ment être obtenus du bureau de la Société et nous souhaitons ardemment que tous les étudiants participent à nos activités.

Osler Society

The Osler Society was founded in the Spring of 1921 by a number of undergraduates in Medicine, its object being to perpetuate the memory and teachings of Sir William Osler by the reading of papers and discussion of topics reflecting his ideals of a liberal medical education. Those interested may supplement their clinical and scientific knowledge by the consideration of those topics of medicine which are of historical and literary significance.

The membership includes students from each class in the Faculty. Several professors have shown an active interest in the Society and have actively participated. Each year an Honorary President has been elected from this older group.

3 SCHOLARSHIPS, BURSARIES, PRIZES, MEDALS AND LOAN FUNDS

For details of scholarships bursaries, and loan funds open to students in all Faculties, see the *General Announcement.*

Within the Faculty of Medicine, students who demonstrate outstanding performance are recognized through the awarding of prizes and medals. Any prizes and medals awarded to a student are noted on his transcript and become a permanent part of his record, as are University Scholarships which are also awarded for outstanding scholastic achievement.

In view of the high level of academic performance already demonstrated and achieved by students entering the Faculty of Medicine, all other awards available in the Faculty at the undergraduate level including the Scholarships and Bursaries listed below, are generally awarded by the Faculty on the basis of good standing and financial need. Students requiring financial aid shoud obtain information and complete the financial aid forms available from the Student Aid Office, 3465 Peel Street, Montreal, P.Q. H3A 1W7.

3.1 SCHOLARSHIPS

DR. MAUDE E. SEYMOUR ABBOT SCHOLARSHIPS. — A fund of $10,000, established in 1938 by an anonymous donation, in honour of the late Maude E. Seymour Abbott, B.A., M.D., F.R.C.P.(C), LL.D.(McGill), to commemorate her distinguished work in connection with the history of Canadian medicine, the Sir William Osler Pathological Collection, and her outstanding research in congenital cardiac disease.

The revenue of this fund provides scholarships awarded by the University to undergraduates of either sex in the Faculty of Medicine, but women are given preference. Awards vary according to the needs of the winners. Further information may be obtained from the Dean's Office, Faculty of Medicine.

J.H.B. ALLAN SCHOLARSHIP. — Available to undergraduate students in any year.

SIR EDWARD W. BEATTY MEMORIAL SCHOLARSHIPS FOR MEDICAL STUDENTS. — A fund of $100,000 was bequeathed by the late Dr. Henry Albert Beatty, the income from which provides two scholarships, not necessarily of equal value, awarded annually to students of either sex and of any nationality. Open to (i) students registered in the McGill Faculty of Medicine as candidates for the M.D., C.M. degree, (ii) graduates of an accredited Faculty of Medicine registered for postgraduate degrees, (iii) graduates of an accredited Faculty of Medicine registered for a postgraduate diploma in a clinical specialty, (iv) graduates of an accredited Faculty of Medicine who are employed in a year of research as part of their residency training program. For students who hold or are working towards the McGill M.D., C.M. the award may be held at any approved institution in Canada or abroad. For other qualified students the award must be held at McGill. The holder is expected to devote his year of tenure either to research or to some form of special training excluding the normal training towards the M.D., C.M. and excluding any of the years of residency training required in the Diploma courses. Awarded by the Faculty of Medicine but not unless suitable candidates present themselves. Apply to the Dean's Office on the forms provided for this purpose on or before February 1 of the year in which the scholarship is to commence.

MAX BINZ SCHOLARSHIP. — From the bequest of the late Max Binz, $1,000 is set aside annually for scholarships in the Faculty of Medicine.

JAMES H. CUMMINGS SCHOLARSHIPS. — Two or more entrance scholarships in the Faculty of Medicine bequeathed by the late James H. Cummings. Awarded at the discretion of the Faculty of Medicine.

DR. E.M. FISHER MEMORIAL SCHOLARSHIP. — Available to undergraduate students in any year.

WALTER J. HOARE MEMORIAL SCHOLARSHIP. — Endowed by the late Dr. Charles W. Hoare, a graduate of McGill University, in memory of his son, Walter J. Hoare, who was killed in World War I. Open to pupils of the Collegiate Institutes of the counties of Essex, Kent and Lambton entering the Faculty of Medicine. If there are no qualified candidates in this preferred class, the scholarship may be awarded to a nominee of the Faculty of Medicine.

KEITH HUTCHISON MEMORIAL SCHOLARSHIPS. — Two or more scholarships, in memory of the late Dr. Keith Hutchison, established in the Faculty of Medicine. Tenable in any year of the course and awarded on the basis of distinguished academic standing and financial need. The holder in any one session may re-apply for the following year.

IVES SCHOLARSHIP. — Established in 1967 by a bequest of the late David Fraser Murray, M.D., C.M., 1924. Awarded on the basis of financial need with preference given to students from Nova Scotia, New Brunswick or Prince Edward Island.

CAMPBELL KEENAN MEMORIAL SCHOLARSHIP. — Established by Miss Charlotte Mildred Hagar in memory of the late Dr. Campbell B. Keenan. Tenable in the second, third, or fourth year of the course in Medicine and awarded on the basis of distinguished academic standing and financial need to an applicant who intends eventually to enter surgical practice. The holder in any one session may re-apply for a subsequent session.

JAMES GRAHAME KER AND FREDERICK K. PETRIE MEMORIAL SCHOLARSHIP. — Awarded to a student from Eastern Ontario (Counties of Dundas, Stormont, Glengarry, Grenville, Carleton, Russell and Prescott) or from Montreal on the basis of distinguished academic standing and financial need. Tenable in the second year of the course in Medicine; however, the Faculty of Medicine may award this scholarship to the same student during the third and fourth years.

JAMES O. MEADOWS AND MARIA MEADOWS AWARDS. — A bequest of $200,000 from the late Dame Maria Cowan Meadows to establish awards for undergraduates or graduates in the Faculty of Medicine for the purpose of supporting research. Preference will be given to candidates working in the field of Cancer Research, but worthy candidates working in other areas of medical or surgical research will also be considered. Apply to the Dean of the Faculty of Medicine.

ROBERT SHARWOOD MEMORIAL SCHOLARSHIP. — Tenable in any year of the undergraduate course in Medicine and awarded on the basis of distinguished academic standing and financial need. The holder in any one session may re-apply for the following year.

FREDERICK SMITH MEMORIAL SCHOLARSHIP. — This name is given to one University Scholarship tenable only in the Faculty of Medicine.

DR. JOSEPH TANZMAN AWARD. — A bequest in honour of Dr. Joseph Tanzman, M.D., C.M. 1927, for the establishment of an award in his name. The award is to be made to a medical student in any given year from the Province of New Brunswick as a preference. If in any year no such candidate is available, the award may be made to any deserving student in the Faculty of Science. This award will be made by the Scholarships Committee of the Faculty of Medicine or the Faculty of Science as the case may be.

UNIVERSITY SCHOLARSHIPS. — See the *General Announcement.*

3.2 BURSARIES

BELLAM MEMORIAL BURSARIES. — A bequest of $20,000 from the estate of the late C.F. Bellam. Awarded on the basis of financial need. Candidates must be from Stanstead County, Quebec.

DR. BEN BENJAMIN MEMORIAL BURSARY. — Established by his sisters in memory of the late Ben Benjamin, B.A., M.D., C.M., lecturer in the Department of Pediatrics. Awarded on high academic standing and financial need.

JOSEPH ISRAEL BENNETT BURSARY. — A bequest by the late Joseph Israel Bennett, the interest on which is to provide a bursary to be awarded annually to a deserving student.

ELFRIC DREW BROWN BURSARY. — Established in 1973 by a bequest from the late Elfric D. Brown, M.D., C.M. The annual income is to provide bursaries to help deserving students in the Faculty of Medicine.

BEVERLEY COONER BURSARY. — Established by the family and friends of the late Beverly Cooner to assist a deserving student. Awarded with the approval of the National Council of Jewish Women on the basis of financial need and academic standing.

CO-OPERATIVE MEDICAL SERVICES FEDERATION OF ONTARIO BURSARY. — To be awarded on the basis of academic standing and financial need, to a student who has completed the pre-medical years and is entering the first medical year in university, and who has been a member or whose parents have been members of a medical co-operative for at least two years. In the event no first year student qualifies, a second, third, or fourth year student may be chosen.

ANNIE DIAMOND BURSARIES. — Established in 1969 for medical students with financial need. The awards will vary according to the needs of the recipients.

SAMUEL EIDLOW MEMORIAL BURSARY FUND. — Established for worthy medical undergraduate students with financial need.

CHANCELLOR FERRIER MEMORIAL BURSARY. — Established by Mrs. Herbert V. Lacey in memory of her great-grandfather, Senator James Ferrier, Chancellor of McGill from 1884 to 1889. Awarded on the basis of academic standing and financial need, with preference to students from the state of Wyoming.

KINCH MEMORIAL BURSARY. — Established by Miss Dia Joyce in memory of Mr. and Mrs. C.H. Kinch to assist medical undergraduate students.

ROCHE BURSARY. — A bursary donated annually by Hoffman-La Roche Limited. Awarded to a student (or students) in the undergraduate medical course who require financial assistance to complete their education.

SAMUEL ROSENFELD BURSARY. — Established by Mrs. Ida Rosenfeld Letovsky in memory of her late husband, Mr. Samuel Rosenfeld, for worthy medical undergraduate students with financial need.

REUBEN ROSS AWARD. — A bequest from the late Reuben Ross, the annual income to provide an annual award available to students in the Faculty of Medicine on the basis of financial need.

SOLOMON DAVID SACKS BURSARY. — Established in 1973 by Mr. & Mrs. Issie Sacks in memory of their son, to assist a deserving medical student. Awarded on the basis of financial need.

ROSE SCHWARZ — HELEN MARCUS BURSARY. — Established by the family and friends of the late Rose Schwarz and the late Helen Marcus to assist a needy and deserving student who intends to devote summer employment to Cancer Research. Awarded with the approval of the National Council of Jewish Women.

BRUCE SMITH BURSARY FUND. — A bequest by the late Dr. Bruce Stewart Smith "to assist poor but worthy medical students to complete medical training at McGill University."

DR. MILTON C. AND NINA E. WILSON AWARD. — Established in 1970 by a bequest from the late Dr. Milton C. Wilson, the annual income to be available for the support of undergraduate or postgraduate students in the Faculty of Medicine who are in need of financial assistance.

3.3 PRIZES

MR. and MRS. J.A. BESNER PRIZE. — Approximately $250, awarded to the student obtaining the highest aggregate standing in Phase II of the medical undergraduate course.

H.S. BIRKETT MEMORIAL PRIZE IN OTOLARYNGOLOGY. — $100. established by Miss Winifred Birkett in memory of her father, the late Dr. H.S. Birkett, former Professor of Otolaryngology, for a student who has shown outstanding performance in Otolaryngology. In addition, a specially bound volume containing an address by Dr. Birkett on the history of medicine in the Province of Quebec and a photograph and brief biographical sketch of Dr. Birkett will be presented to the winner.

JAMES Q. BLISS ANNUAL BOOK AWARD. — Awarded to the student who obtains the highest standing in Physiology in the First Year Medical Class.

BRISTOL LABORATORIES OF CANADA PRIZE. — An annual prize of $125, awarded to a student in Phase II.

JOSEPH MORLEY DRAKE PRIZE. — (Founded by the late Joseph Morley Drake, M.D.). — A prize of $125, awarded to the student considered to be the most outstanding in Pathology.

ROBERT FORSYTH PRIZE. — $75, bequeathed by the late Miss Jeanie Forsyth, awarded each year to a student who, upon graduation, has shown particular ability in all branches of Surgery.

CHARLES E. FROST MEDICAL PRIZE AND BRONZE MEDAL. — An annual prize valued at $500 to be awarded to a medical student who has shown the most promise in the field of Pharmacology. A bronze medal will also be presented to the winner.

HARRY S. GROSS MEMORIAL PRIZE. — $60, bequeathed by the late Mrs. Esther B. Gross in memory of her late husband, Harry S. Gross, D.D.S. 1913, M.D., C.M. 1921. Awarded to the student with the highest standing in Surgery in Phase II of the medical course.

JOSEPH HILS PRIZE. — (Founded by the late Dr. Joseph Hils, of Woonsocket, R.I.). A prize of $75, awarded to the student who obtains the highest standing in Pharmacology.

F. SLATER JACKSON PRIZE. — Value $75, founded by Mr. and Mrs. H.F. Jackson in memory of their son, the late F. Slater Jackson, M.D. Awarded to the student with the highest standing in Histology.

CAMPBELL KEENAN MEMORIAL PRIZE IN CLINICAL SURGERY. — $50, established by Miss Charlotte Mildred Hagar in memory of the late Dr. Campbell B. Keenan. Awarded to the student in the graduating class who has shown the highest proficiency in Clinical Surgery. The winner of the Robert Forsyth Prize in Surgery is ineligible.

DR. W.B. LEWIS PRIZE. — An essay prize open to students in all faculties. For further information contact the Scholarships Office in the Registrar's Office.

CHESTER MACNAGHTEN PRIZES. — An essay prize open to students in all faculties. For further information contact the Scholarships Office in the Registrar's Office.

MONTREAL CHILDREN'S HOSPITAL CUSHING MEMORIAL PRIZE. — $100, awarded to the student with the highest standing in Pediatrics.

PSYCHIATRY PRIZE. — Value $100, awarded to the medical student who, in the opinion of the Department of Psychiatry, shows the greatest promise in Psychiatry.

SAMUEL ROSENFELD PRIZE. $50, awarded to the student with the highest standing in Medical Microbiology of the medical course.

MONA BRONFMAN SHECKMAN PRIZE. — $125, awarded for the highest academic standing in Psychiatry.

ALEXANDER D. STEWART PRIZE. — $150, founded by the late W. Grant Stewart (Arts 1885, Med. 1888) in memory of his brother, the late Alexander D. Stewart (Med. 1888), to be awarded to the member of the graduating class who, in the opinion of the Faculty, presents in every respect the highest qualifications to practise his profession.

J. FRANCIS WILLIAMS PRIZE IN MEDICINE AND CLINICAL MEDICINE. — $500, founded by the late J. Francis Williams, M.D., awarded to the student obtaining the highest standing in Medicine in Phase III of the medical curriculum.

3.4 MEDALS

WALTER CHIPMAN GOLD MEDAL. — Founded by the late Max Strean in honour of Dr. W.W. Chipman. Awarded to the student whose performance in Obstetrics and Gynecology throughout the medical curriculum is considered to be outstanding.

HOLMES GOLD MEDAL. — Founded by the Medical Faculty in 1865, in memory of the late Andrew Holmes, M.D., LL.D., sometime Dean of the Faculty. Awarded to the student graduating with the highest aggregate standing in the entire medical curriculum.

SUTHERLAND GOLD MEDAL. — Founded in 1878 by the late Mrs. Sutherland in memory of her husband, William Sutherland, M.D., formerly Professor of Chemistry in this Faculty. Awarded to a student with a good overall standing in Phase I, and whose performance in biochemistry is considered to be outstanding.

WOOD GOLD MEDAL. — Founded by Casey A. Wood, M.D., LL.D. Awarded to a student for the most outstanding clinical performance in Phase III. The winner of the Holmes Medal is not eligible.

3.5 LOAN FUNDS

MAUDE ABBOTT MEMORIAL LOAN FUND. — Established by the Federation of Medical Women of Canada and available to any woman medical student, first year intern or graduate student. Apply to the Secretariat, Federation of Medical Women of Canada, Box 8244, Ottawa, Ontario K1G 3H7.

BORIGHT LOAN FUND. — Established in 1963 by a bequest from the late George H. Boright for loans to deserving medical students. *

BOSWELL JAMES LOAN FUND. — Established in 1943 by Dr. A. Boswell James and available to undergraduates and graduates.*

DAVID M. CALDWELL STUDENT LOAN FUND. — Established in 1973 by a bequest from the late David M. Caldwell M.D.'19, to assist students in the Faculty of Medicine, with preference given to American students.*

ALEC AND SYLVIA DOLLIN LOAN FUND. — Established in 1965 by Mr. Alec Dollin for loans for medical students.*

KELLOGG LOAN FUND. — Given by the Kellogg Foundation to provide loans up to a maximum of tuition fees in any year to students in good standing who require such assistance. The regulations and application forms are the same as for other loan funds controlled by the University.*

LACEY LOAN FUND. — Established in 1962 by a donation from Mrs. Herbert Van Devanter Lacey, Cheyenne, Wyoming, primarily for aid to medical students from the state of Wyoming but may be extended to others in accordance with the following priorities: Medical students from the state of Wyoming; Dental students from the state of Wyoming; Medical students from other states of the U.S.A.; Medical students from other countries. Loans not to exceed $700 each per year.*

GERTRUDE MUDGE MEMORIAL STUDENT AID FUND. — Established in 1958 by donations from students, graduates, and staff in memory of the late Gertrude Mudge, for many years Assistant Secretary of the Faculty of Medicine. Loans shall not exceed the tuition fees for the year.*

WESTON FAY VOLBERG JR. MEMORIAL LOAN FUND. — Established in 1956 by classmates of the late Weston Fay Volberg, Jr., M.D., C.M. 1953, and available to medical students.*

*Apply to student Aid Office.

4 CURRICULA, COURSES OF STUDY AND PROGRAMS

4.1 PROGRAMS IN MEDICINE

Application for Admission

Application for admission to the Faculty of Medicine must be made on the special application forms available only from the office of the Associate Dean (Admissions), Faculty of Medicine, Room 609, McIntyre Medical Sciences Building. Applications for the first-year class of September 1977 will be available after September 1, 1976. Applicants to the Four-year and Five-year Programs (as well as advanced standing) will be asked to complete a Stage 1 application which is reviewed by members

of the Admissions Committee. Selected applicants will be invited to complete a Stage II application. There is no fee for the Stage I application. *In order to speed up our responses to your Stage I application, we enclose self-adhesive address labels. Please print your name and address on them and return them to us with your Stage I application.* The Stage II application must be accompanied by a non-returnable fee of fifteen dollars ($15.00 in Canadian funds) in the form of a cheque or money order payable to McGill University. APPLICANTS **CURRENTLY** REGISTERED AT McGILL UNIVERSITY ARE NOT REQUIRED TO PAY THE $15.00 FEE. The deadline for the Stage I application is January 15, 1977 and for the Stage II application, March 1, 1977.

Although the great majority of the entering class is below the age of 27, older applicants will be considered.

During the past few years, the Admissions Committee has selected an increasing number of Quebec students. About 15% of the entering class are accepted from applicants outside the Province of Quebec. There is a total of 160 students in the first-year class.

Accepted students for the 1975 entering class had the following credentials: mean G.P.A. 3.65; M.C.A.T. percentile scores, VA — 75, QA — 76, GI — 72, SCI — 72.

Requirements for Entrance

Four-Year Program in Medicine

Applicants must be proceeding toward the satisfactory completion of a course of study leading to the Bachelor degree at a recognized college or university. All successful candidates must be in receipt of the Bachelor degree prior to registration in first year of the medical curriculum.

Scientific Requirements:

Chemistry (general), one full course with laboratory work
Chemistry (organic), one full course with laboratory work
Physics, one full course with laboratory work
Biology, one full course including studies of biology at cell and molecular level
In addition, Physiology (human and/or mammalian), one full course with laboratory work is recommended.

Cultural Requirements: In addition to the scientific requirements, applicants are encouraged to have an adequate preparation in English literature and composition, mathematics, and working knowledge of the French language.

In selecting courses, in addition to the specific requirements listed above, an intending medical student should plan his premedical program as a whole, and in accordance with a definite educational objective. Emphasis should be placed on the broad educational value and the intellectual training afforded, rather than on the factual content of such premedical curricula. The student is therefore advised to select a major field which appeals to him; this major field may be selected from the natural or social sciences, or the humanities. Certain subjects, though not essential, have been found valuable in medical study and may be included as electives if the curriculum in the major field permits; psychology, sociology, genetics, anthropology, mathematics, languages.

Students are reminded that although the majority of applicants have completed their premedical studies in the Faculty of Science, successful applicants have been chosen from other faculties (Arts, Nursing, Physical and Occupational Therapy, Dentistry, Law, Management, Education, and Engineering) providing they have met the entrance requirements.

Admission Test Requirements: All applicants are required to take the Medical College Admissions Tests. *For those applying to the four-year medical program the test must be taken prior to the close of Stage I applications on January 15, 1977.* This test is conducted by the American College Testing Program (P.O. Box 414, Iowa City, Iowa 52240) at various centres in the spring and fall of each year. The 1976 MCAT date is October 2, 1976. The fall postmark registration deadlines are September 3 for those candidates testing in the United States, Canada and Puerto Rico; and August 30 for those testing in foreign countries. Registration materials should be available on college campuses about February 1, 1976. *Please do not mail registration packets too close to the postmark deadline since past experience has shown that packets are sometimes postmarked a day or two after they have been put in a mail box.* It is realized that English is not the first language of many applicants to this Faculty and this fact will be taken into account in assessing the results of this test.

Five-Year Program in Medicine

Canadian citizens and landed immigrants resident in the Province of Quebec, completing the two-year program in Quebec Colleges of General and Professional Education (CEGEP), are eligible to apply for the five-year program providing they have taken the following science courses: one full year course in General Chemistry with laboratory work, one half year course in Organic Chemistry with laboratory work, one full year course in Physics with laboratory work and one full year course in General Biology. We also recommend a full year course in Mathematics although this is not a requirement. Persons having attended other technical schools or university programs before attending CEGEP are not eligible to apply for the five-year program, nor are persons attending any collegial or premedical program that is not a Quebec CEGEP. Students in the five-year program will be registered in the Faculty of Science for the first year (Med-P Year). Providing

that a satisfactory academic standing has been maintained, the student proceeds into the four-year medical curriculum. Such applicants may complete the scientific entrance requirements for the four-year program during the Med-P year.

Admission Test Requirements: *Applicants to the five-year medical program must write the Medical College Admissions test in the spring of their second collegial year.* Please note that you must write to the Association of American Medical Colleges, One Dupont Circle, N.W., Washington, D.C. 20036. In order to register for this test you must write to them no later than January 31, 1977. It is realized that English is not the first language of many applicants to this Faculty and this fact will be taken into account in assessing the results of this test.

Equivalent (Advanced) Standing

Students are admitted only to the first and second years of this Faculty. A student of another medical school who wishes to apply for admission to the second year (advanced or equivalent standing) is required to submit an official statement of his preliminary education, the medical program he has followed, and the standing he has obtained. This should be accompanied by a calendar of the medical school in which he has studied, giving a full statement of the course of study, and a letter of recommendation from his Dean.

The equivalent courses of study in schools recognized by this University shall be determined from time to time. Acceptance of a course of study as equivalent may not include the examination in that subject held by the recognized school and the student may be required to pass such examinations, individual or comprehensive, as may be required by this Faculty.

Applicant Review and Notification Procedure

After a review of the submitted application material, the Admissions Committee decides which applicants will be invited to come to the Faculty of Medicine Offices for interviews with Committee members. The Admissions Committee judges applicants on the basis of academic achievement (entire academic record and MCAT) as well as personal qualities and attitudes.

All applicants will be notified by letter of the decision of the Admissions Committee. All offers of admission are conditional upon final review of the results of any studies in progress. Successful applicants are given two weeks in which to reply to the letter and to state whether the offer of a place in the class will be accepted. No deposit fee is required.

4.2 REGISTRATION

Students in the Faculty of Medicine will register on Wednesday, September 1, 1976. There will be a late registration fee of $25.00 for those who register after this date. The fee will not be refunded except by authorization of the Faculty. No student will be admitted after the fifteenth day of the session except by special permission of the Faculty.

4.3 FEES

The University reserves the right to make changes without notice in its published scale of fees if, in the opinion of the Board of Governors, circumstances so require. Fees are refundable under the conditions described in the *General Announcement.*

University Fees

1. Four-year program in Medicine (all years): $719.00 plus Student Services fee of $60.00 and Students' Societies fees of $25.00.
2. Repeating Students
   Students repeating a year pay full fees.
3. *Ad eundem* Fee
   Students entering any year above the first pay a special *ad eundem* fee of $10.00
   Graduation Fee — $10.00.

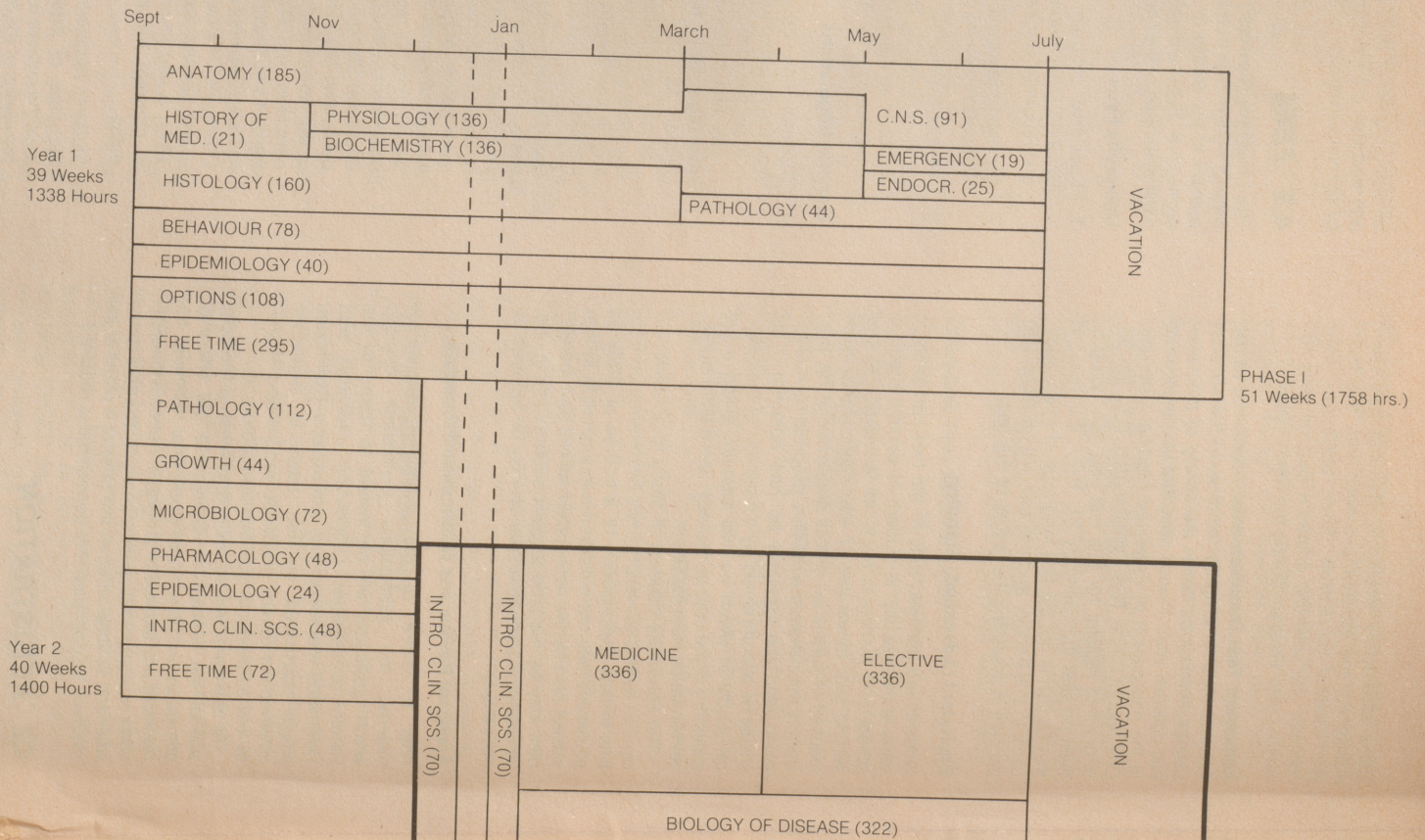
General Regulations

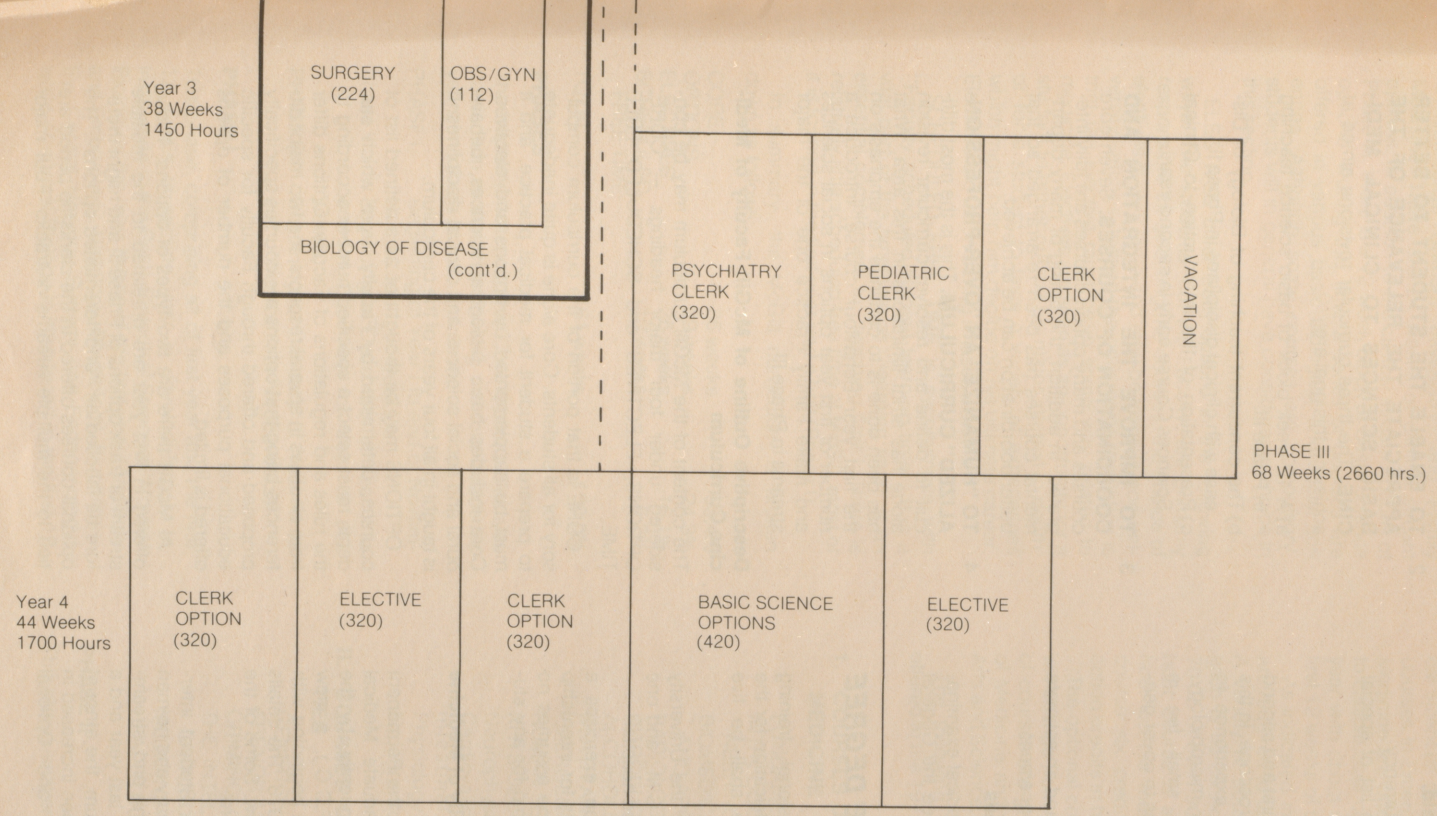
1. Students entering the University for the first time are required to pay their fees either by mail or in person at the Accounting Department.
   The first instalment is due within 10 days after registration; the second instalment before January 15, 1977.
   A late payment fee of $10.00 is charged for payment during the first 30 days after registration. A late payment fee of $25.00 is charged thereafter.
2. Students who have completed one or more years and intend to register in the succeeding year must pay one half of the total sessional fee by mail or in person to the Accounting Department before August 23, 1976, otherwise they will not be permitted to register. Instructions for paying fees in advance will be mailed to all returning students, either with their Reports of Sessional Standing or a short time later. Students who have been notified by the University of the award of a scholarship, bursary or student loan, and who require this for payment of the first instalment of fees, must obtain a *Permit to Delay Payment of Fees* from the Student Aid Office, McGill University.
   The second instalment is due January 15, 1977. A late payment fee as mentioned above is charged for payment after the specified dates.
3. Students registering late must pay their fees at the time of registration, failing which they become subject to the late payment fee and the provisions of the following paragraph:

As soon as possible after the prescribed dates for the payment of fees the Chief Accountant will send to the Registrar's Office a list of the

McGILL FACULTY OF MEDICINE CURRICULUM

(numbers represent time in hours)*





* Hours calculated on basis of 35 hours/week in PHASES I & II and in Basic Science options of Phase III; 40 hours/week in PHASE III clerkships and electives. Hours and weeks do not include vacations and holidays.

TOTAL
161 Weeks
5888 hrs.

(revised Aug. 1, 1974)

registered students who have not paid their fees. Until such time as the fees are paid or a satisfactory arrangement is made with the Chief Accountant, Reports of Standing, transcripts of record and diplomas will be withheld.

All fees are payable in Canadian currency.

For further information and for a list of special fees see the *General Announcement.*

Microscopes

The Faculty provides all students in first and second year with a first quality binocular microscope. In this way, all students have the same experience in microscopy as it applies to histology, microbiology, pathology and microhistology. A small fee is charged for the rental of microscopes to cover general repairs and mainenance costs.

Board and Residence

For details of board and residence and an estimate of expenses, see the *General Announcement.*

Health Service and Student Services

For details of the Health Service, medical examinations, and other student services see the *General Announcement.*

4.4 COURSES FOR THE DEGREE OF M.D., C.M.

The minimum period of professional training required by the University as a qualification for the independent practice of Medicine shall be five years, including:

> four years of medical study in the University leading to the degree of M.D., C.M.; and one year on internship in an approved hospital.

While the Faculty's adminisration exercises a general supervision of arrangements for internship applications, the Faculty of Medicine assumes no responsibility to provide an internship for any student.

Educational Goals of McGill Faculty of Medicine Curriculum

After four years of deliberations by the Permanent Advisory Committee on Undergraduate Medical Education (PACUME) and, subsequently, by the Faculty Curriculum Committee (F.C.C.), a new medical curriculum was introduced beginning with the entering class of September, 1973. The details of this curriculum are outlined below. Some of the major goals of the new curriculum are:

1. **TO INCREASE FLEXIBILITY.** Student interests vary, the needs of society vary and no man can be master of all fields. To this end, streaming has been introduced in the last year and a half (PHASE III) of the curriculum, the amount of scheduled Free Time has been increased in the first and second years and Optional courses have been added to the first year program. In addition, Elective programs continue to make up a significant portion of the curriculum.
2. **TO ENABLE THE STUDENT TO BETTER APPRECIATE THE RELEVANCE OF THE BASIC SCIENCES TO CLINICAL MEDICINE.** The three curricular revisions aimed at achieving this goal are:
   a) A 12-week block of basic science teaching in Phase III.
   b) The concurrent teaching of Biology of Disease with clinical disciplines in Phase II.
   c) Presentation of the Introduction to Clinical Sciences Course early in second year.
3. **TO IMPROVE THE INTEGRATION AND COORDINATION OF COURSES.** Seven core courses and many option courses are fully integrated. In addition, the timing of many departmental courses has been re-arranged so that better coordination can be achieved.
4. **TO "HUMANIZE" AN "OVER-PROFESSIONALIZED" CURRICULUM.** This is the most difficult to define and resolve; curricular revision alone has strict limitations in this area. What has been done is to continue the emphasis on the first year Behaviour course, introduce a number of first year options in social sciences and make Family Practice one of the major streams in Phase III.

Descriptive Outline of McGill Faculty of Medicine Curriculum

The content of the McGill curriculum may be considered under four major headings — CORE, OPTIONS, ELECTIVES and SCHEDULED FREE TIME.

CORE is that portion of the curriculum compulsory for all students. Core *alone* is quite inadequate to prepare a student for medical practice, and it must be supplemented by options and electives. Core includes basic biological sciences, behavioural and social sciences and clinical disciplines. It is taught in all four years of the curriculum.

OPTIONS may be thought of as a defined list of courses, determined by Faculty, from which students must select a specified number according to the rules and regulations of Faculty. Options differ from electives in several respects, the two major differences being that options are courses specifically proposed and offered through Faculty for specific educational purposes and the number of options offered is limited.

At McGill there are two types of options. Those offered in first year are unrelated to the multiple stream or track options of Phase III and might therefore be labelled as "undifferentiated options". The optional courses offered in the clerkship period are tied to the multiple streams or tracks. Four major

clinical stream options and two "branches" of these major streams are offered in Phase III: Internal Medicine — General Stream or Pediatric Branch; Surgery — General Stream or Obstetrical-Gynecological Branch; Psychiatry; and Family Medicine. There are 24 weeks of clinical stream options. In addition to the clinical stream options of Phase III, there is a 12 week block of Basic Science options. During this time a series of courses are offered in various basic biological and social sciences. Although some courses are compulsory, students will in general have considerable choice in this section.

ELECTIVES differ from options in the following ways: The students, not the Faculty, are primarily responsible for selecting the courses; the choice of electives is very large and may be taken in non-university settings. Indeed the only major restriction is that the elective must be in some way related to medicine. Electives are seen as an opportunity for a student to either pursue his major interest in depth, or for a student to taste a variety of experiences which might help him decide on his ultimate career. Electives are taken during Phases II and III.

SCHEDULED FREE TIME is synonymous with "Faculty scheduled student learning time." It is a vital part of the timetable as "learning time" is an essential complement to "teaching time". There is relatively little scheduled free time at McGill; most of it is formed in the first year and a half (Phase I).

In summary, the McGill curriculum is broken down as follows:

CORE	86 weeks	53.4%
OPTIONS	39 weeks	24.3%
ELECTIVES	26 weeks	16.1%
SCHEDULED FREE TIME	10 weeks	6.2%
TOTAL	161 weeks	100.0%

PHASES

The implementation of this Core-Options-Electives curriculum is done by dividing the four academic years into three phases as follows:

PHASE I	Beginning of Year I to end of November of Year II (51 weeks)
Phase II	Beginning of December of Year II to end of December of Year III (42 weeks)
PHASE III	Beginning of January of Year III to end of May of Year IV (68 weeks)

PHASE I

This phase, comprising all of first year and the first 12 weeks of second year is devoted largely to instruction in the Basic Biological Sciences. Normal Biology is the main theme of the first year (Anatomy and Embryology, Histology, Physiology, Biochemistry, Central Nervous System, and Endocrinology) while Abnormal Biology is introduced in the first 12 weeks of second year (Pathology, Microbiology and Pharmacology). A course in Growth and Development is also given during this period. Behavioural science and Epidemiology are the core non-biological sciences given in this phase. In addition short courses in Emergency Medicine and the History of Medicine are offered in first year. The introduction to clinical sciences begins in September of second year with about one half-day per week during the first 12 weeks of the year.

As indicated in the timetable, first year students are required to take 108 hours of optional courses. A variety of courses are offered and, in general, each is 30-35 hours in length. A few courses are 70-75 or even 90-100 hours in length. Each 30-35 hour course is assigned two credits, each 70-75 hour course four credits and each 90-105 hour course six credits. Every student must take six option credits in his first year.

The optional courses in first year are variable and will change from year to year. Two main categories of courses are given; those offered by the Faculty of Medicine and those offered by the Faculties of Arts and Science.

The following first year optional courses were offered in the 1975-76 academic session:

1. COURSES OFFERED BY THE FACULTY OF MEDICINE

FUNDAMENTALS OF HUMAN NUTRITION
INTRODUCTION TO BIOMEDICAL ENGINEERING
BIOMEDICAL ENGINEERING METHODS AND APPLICATION TO MEDICINE
RADIOLOGY
INTRODUCTION TO ORGAN PHYSIOLOGY
ALCOHOLISM AND DRUG ABUSE
DEATH AND DYING
EMERGENCY CARE
HUMAN SEXUALITY
PHYSIOLOGY SHORT OPTIONS — (e.g., Neurophysiology of Special Senses; Cardiovascular, Respiratory, Renal, Gastrointestinal, Molecular and Muscle Physiology; Hematology; Immunology; Endocrinology; Artificial Organs)

II. COURSES OFFERED BY OTHER FACULTIES

GENETICS OF MAN
FRENCH AS A SECOND LANGUAGE
CRIMINOLOGY
THE INTELLECTUAL AND SOCIAL BACKGROUND TO MODERN MEDICINE
MEDICINE AND SOCIETY
HEALTH ECONOMICS

PHASE II

This phase is taken up with three main areas:

1. The bulk of the Introduction to Clinical Sciences Course.
2. The pre-clerkship clinical rotations in Medicine (12 weeks), Surgery (8 weeks), Obstetrics and Gynecology (4 weeks).
3. The Biology of Disease Course which is predominantly a course in Pathophysiology given concurrently (two half days per week) with the clinical rotations.

In addition, Phase II contains a 12-week elective block.

PHASE III

Phase III which begins in January of third year and includes all of fourth year is predominantly the clerkship phase. The 68 weeks of this phase are divided as follows:

Clerkship	40 weeks
Electives	16 weeks
Basic Science Options	12 weeks

Streaming begins in Phase III and there are four major streams or tracks as outlined above under options. It should be noted that the 12-week Basic Science Block in this Phase is part of the Optional portion of the curriculum. On the other hand the 16 weeks reserved for the Pediatric and Psychiatry clerkships in this phase are compulsory for all students and constitute part of Core.

It should be noted that the purpose of streaming during the clerkship period is not to introduce early specialization. Rather, it is geared to offering the student a well planned program centered around an area of special interest which may or may not be his eventual career choice. The clinical content of each of the streams is considered to be broad enough to prepare the student for any internship or residency program.

The philosophy underlying the clinical clerkship is that on each clinical service, the clinical clerk will occupy a well defined position as a regular member of a clinical teaching unit, with increased responsibility for patient care. The clerkship is designed to permit the student to consolidate the clinical skills he has acquired in Phases I and II and to begin to acquire "professional maturity".

The clinical clerkship is structured to satisfy the demands of most licensing bodies. Consequently, students may in most instances, enter directly into straight internships as the first phase of their specialty training.

Each clinical clerk is entitled to four weeks vacation which must be taken at the time allocated in the timetable.

4.5 CURRICULUM REVIEW

The Faculty realizes that there is a need for constant review of the medical curriculum necessitated by:

a) Current rapid advances in scientific knowledge.
b) Probable changes in the role of the medical school in relation to the community with concomitant changes in the delivery of health care.
c) Continued application of principles developed in the field of general educational science to medical education.

Therefore a permanent student-faculty curriculum committee operates within the Faculty of Medicine. This Committee is charged with the task of studying the necessity for further curriculum revision, and planning the implementation of any modifications thought desirable.

4.6 EVALUATION SYSTEM

The courses taken within the Faculty of Medicine are divided into two groups, namely major courses and minor courses. Student evaluation, either by examination and/or by other means (term papers, tutorial assessments of performance in small groups or on clinical services, etc.) is the general rule for all courses whether major or minor.

Major courses are: Anatomy (Embryology), Histology, Physiology, Biochemistry, Central Nervous System, Pathology, Medical Microbiology, Pharmacology, Epidemiology, Biology of Disease, Phase II Medicine, Phase II Surgery, Phase II Obstetrics and Gynecology, Phase III Psychiatry, Phase III Pediatrics, all Phase III clerk option rotations, and fourth year basic science options.

Minor courses are: History of Medicine, Emergency Medicine, Endocrinology, Growth and Development, Introduction to Clinical Sciences, First Year Options, and all electives.

It should be noted that for the purposes of evaluation the six required first year option credits are combined (by averaging grades or weighing individual assessments) to represent one final composite grade.

A student who receives a failing evaluation in any major subject will be required, before he is eligible for a supplemental (or remedial) evaluation, to present a certificate to the Dean's Office from the Departmental Chairman or Course Director concerned, that the student has taken sufficient extra tuition as would indicate that he has reviewed the subject and is a suitable candidate for the supplemental (or remedial) evaluation.

There is a strict difference between the importance of a major and a minor course. If a student fails in the supplemental (or remedial) evaluation of a major course, there are definite restrictions as shown below, but if he fails in the supplemental (or remedial) evaluation of a minor course, he is permitted to carry conditions as shown below.

For the purposes of evaluation the four-year curriculum is broken down into the following sessions, the end of each representing the time at which regular Promotions Committee meetings will be held to

determine whether or not a student may proceed to the next session.

Evaluation Session I
The beginning of Year I until the end of Year I

Evaluation Session II
The beginning of Year II until the end of Phase I

Evaluation Session III
The beginning of Phase II until the end of Phase II

Evaluation Session IV
The beginning of Phase III until the end of Phase III

Except under unusual circumstances, a student is not allowed supplemental (or remedial) evaluations in three or more major courses in any one evaluation session. He will be required to repeat his session or retire as decided by the Promotions Committee, from whose decision there shall be no appeal.

Except under unusual circumstances, a student is not allowed supplemental (or remedial) evaluations in two major and one minor course in any one evaluation session. He will be required to repeat his session or retire as decided by the Promotions Committee, but he may appear before the Promotions Committee to plead his case if it is decided he should retire.

Unless the Promotions Committee finds special mitigating circumstances, a failure in the supplemental (or remedial) evaluation of a major course will require the student to repeat the Evaluation Session, and no student may repeat such an Evaluation Session more than once. Any student who fails in the supplemental (or remedial) evaluation of two major courses in any one Evaluation Session shall be required to retire without the privilege of further supplemental (or remedial) evaluations unless the Promotions Committee finds special mitigating circumstances.

Except under unusual circumstances, a student who fails in the supplemental (or remedial) evaluations of three or more minor courses in any one Evaluation Session, must repeat that Evaluation Session or may be asked to retire, as may be decided by the Promotions Committee, but he may appear before the Promotions Committee to plead his case if it is decided that he should retire.

A student who fails in the supplemental (or remedial) evaluation of not more than two minor courses in one Evaluation Session, may proceed with other subjects in the subsequent Evaluation Session, carrying such subjects as conditions. However, he may not be evaluated in any subsequent major course until the conditions have been removed, nor may he carry more than two conditions at any time. Should a student fail to remove his conditions prior to the time for evaluation in a subsequent major course, he will be required to revert to the previous Evaluation Session unless the Promotions Committee finds special mitigating circumstances.

Except under unusual circumstances, a student in Phase III may take a supplemental (or remedial) evaluation in one clinical subject only, but must present a certificate from the Departmental Chairman or his delegate that he has taken extra tuition in this subject in one of the teaching hospitals and/or affiliated teaching hospitals of the McGill Faculty of Medicine. If he should fail in this supplemental (or remedial) evaluation (and provided he has passed the basic science option evaluation), he must repeat the major clinical courses offered in Phase III (Pediatrics, Psychiatry and three Clerk Option rotations) and successfully pass the evaluations for each of them.

Except under unusual circumstances, a student in Phase III who fails in the supplemental (or remedial) evaluations of the basic science options, will be required to repeat the three clerk options, the basic science options, and one elective course of Phase III, and successfully pass the evaluation for each of them.

Except under unusual circumstances, a student in Phase III who fails in the supplemental (or remedial) evaluations of two major courses must repeat the entire Phase or retire, as decided by the Promotions Committee from whose decision there shall be no appeal.

A student will not be allowed to repeat an Evaluation Session more than once, nor may he repeat a subsequent Evaluation Session if such repetition would seem indicated because of failure in evaluations, except on special recommendation of the Promotions Committee, acting upon the motion of the representatives on the committee of the Course Director or Department concerned.

There shall be Promotions Committees for each Evaluation Session, consisting of the Dean or his delegate, the Associate Dean of Medical Education, the Associate Dean of Admissions, the Chairman of the Electives Program, and the representatives appointed by the Dean of all major and minor courses given during the session. Each committee will pass on all cases of students who fail to satisfy course requirements in the respective session.

No evaluation, examination mark, etc. shall be considered final until passed by the Promotions Committee.

The Faculty reserves the right to require the withdrawal of any student at any time if, in the opinion of his instructors, he is incompetent. There can be no appeal from this decision.

Because the Evaluation System has a significant influence on the whole of the educational process, it is under constant review by the Faculty Evaluation Committee. Any of the rules and regulations published here or in previous calendars must not be considered inviolate; the Faculty reserves the right to change any of these rules and regulations at any time although in general such changes as are made will not come into effect in the middle of a session.

Grading

The Faculty employs a modification of the pass-fail system. This means that no marks or grades are released to any agency, institution, or individual outside McGill University. The one exception to this rule is the case of students applying for transfer to another medical school. In this instance grades, but not class standing, will be forwarded to the medical school Admissions Office if the applicant requests that this be done. All departments bear responsibility for evaluation of the students' performance and submit all final evaluations to the appropriate Promotions Committee of Faculty. Following approval by the Promotions Committee, the evaluation data are recorded in the Dean's Office and form part of the student's permanent academic file.

4.7 REQUIREMENTS FOR THE DEGREE OF M.D.,C.M.

1) Every candidate for the degree of Doctor of Medicine and Master of Surgery in this University must be at least twenty years of age and of good moral character.

2) He must have fulfilled all the requirements for entrance to the Faculty of Medicine and have attended courses of instruction for four full sessions of not less than nine months each in this University or in some other university, college or school of Medicine, approved by this University.

3) No one is permitted to become a candidate for the degree who has not attended at least two full sessions at this University.

4) Every candidate for the degree must have passed all the required evaluations in the subjects comprising the Medical course.

Intern Matching Services

A matching service is a clearinghouse designed to help final year medical students obtain the internships of their choice and to help hospitals and internship program directors obtain the students of their choice. It provides an orderly method for students to decide where to intern and for hospitals to decide which applicants they wish to enroll. For both students and program directors, it removes the factors that generate unfair pressures and premature decisions.

The matching service acts as the student's agent on the instructions embodied in the student's confidential list of all the internships for which he or she has applied, ranked in order of preference. Similarly, the matching service acts as the hospital's agent on the instructions embodied in its confidential list of all the students who have applied, ranked in order of the hospital's preference.

In the past few years final year students at McGill have participated in three different matching services. The Quebec Intern Matching Service sponsored by the Quebec Professional Corporation of Physicians matches applicants from Quebec universities seeking mixed or rotating internships in Quebec hospitals. The Canadian Intern Matching Service matches Canadian applicants for straight, mixed or rotating internships in over 120 training programs across Canada. The National Intern Matching Service matches all applicants to American internship programs.

A full explanation of these medical matching services is provided to third-year medical students in June.

4.8 REQUIREMENTS FOR LICENSE

Candidates accepted for admission are reminded that it is their personal responsibility to ensure that they fulfill all the licencing requirements of the country in which they intend to practice medicine. A university degree does not confer the right to practise. In each province of Canada, in each one of the United States and in all other countries the authority to licence is vested in a licencing body which has its own special laws and requirements. In many cases a special standard of general education is insisted upon before *beginning* the study of medicine. One of the requirements in several provinces is that the entrance qualifications of the student must be registered with the provincial licencing body for five years before a licence to practise can be obtained.

Candidates accepted for admission should therefore communicate as soon as possible with the licencing body of the country in which they intend to practise and obtain from that licencing body the necessary instructions.

Non-Canadian candidates wishing to practise medicine in the Province of Quebec must have a working knowledge of French before they will be granted a permanent licence.

Full information as to the requirements for registration in the various provinces may be obtained from the Registrars of the Provincial Medical Boards as follows:

ALBERTA — Dr. L.H. le Riche, 9901-108th St., Edmonton, Alberta, T5K 1G9
BRITISH COLUMBIA — Dr. W.G. McClure, 1807 West 10th Ave., Vancouver, B.C. V6J 2A9
MANITOBA — Dr. J.B. Morison, 371 Broadway Ave., Winnipeg, Man. R3C 0T9.
NEW BRUNSWICK — Dr. Stephen D. Clark, P.O. Box 2313, Postal Station "C", Crown Street, Saint John, N.B.
NEWFOUNDLAND — Dr. G.M. Brownrigg, 47 Queens Rd., St. John's, Newfoundland.
NOVA SCOTIA — Dr. M.R. Macdonald, Sir Charles Tupper Medical Building, 15th Floor, University Ave., Halifax, N.S.
ONTARIO — Dr. J.C.C. Dawson, 64 Prince Arthur Ave., Toronto, Ont. M5R 1B4

PRINCE EDWARD ISLAND — Dr. S. MacDonald, 206 Spring Park Rd., Charlottetown, P.E.I.
QUEBEC — Dr. A. Roy, 1440 Ste. Catherine St. West, Montreal, P.Q. H3G 1R8.
SASKATCHEWAN — Dr. H.D. Dalgleish, 211-4th Ave. S., Saskatoon, Sask.

Medical Council of Canada

In order to take the examination of the Medical Council of Canada, a candidate must present a certificate from the Registrar of a Provincial Medical Board to the effect that he holds qualifications accepted and approved of by the Medical Board of that province.

Full information may be obtained by writing to the Registrar, Box 8234, 1867 Alta Vista Drive, Ottawa, Ontario. K1G 3H7.

4.9 GRADUATE PROGRAMS LEADING TO DIPLOMAS IN THE CLINICAL DEPARTMENTS OF THE FACULTY OF MEDICINE

The Faculty of Medicine in conjunction with the basic science departments and the affiliated teaching hospitals offers a wide variety of programs leading to degrees of M.Sc. and Ph.D. or to McGill Certificate of Intern and Resident Training. Details of the graduate programs available are included in the McGill calendar of Postgraduate Training Programs and in the Calendar of Graduate Studies in Medical and Allied Sciences.

Initial inquiries should be addressed to the Associate Dean (Postgraduate Medical Education) of the Faculty of Medicine.

4.10 GRADUATE STUDIES AND RESEARCH IN THE MEDICAL SCIENCES

Facilities for graduate work in the basic medical sciences and in the clinical sciences are offered by many of the Departments of the Faculty of Medicine.

Research in relation to clinical disciplines is carried out in the research laboratories at the Montreal Children's Hospital, the Montreal General Hospital, the Royal Victoria Hospital and the Montreal Neurological Institute, as well as the laboratories of the Queen Mary Veterans' Hospital, L'Institut de Recherche Clinique, and the Lady Davis Institute of the Jewish General Hospital. Graduate work in the clinical sciences is supervised by those members of the Departments of Medicine, Surgery and Pediatrics who are responsible for the direction of research programs; and for administrative purposes graduate work in these areas is grouped under the Department of Experimental Medicine, and the Division of Experimental Surgery, which is a branch of the Department of Surgery.

Inquiries concerning research training in the medical sciences should be directed to the chairman of the department in which the candidate wishes to receive his or her graduate education. Alternatively, letters may be addressed to:

Associate Dean for Graduate
Studies and Research
The Faculty of Medicine
McGill University
3655 Drummond St.
Montreal, Quebec H3G 1Y6.

5 COURSES OF INSTRUCTION

5.1 ANATOMY

Required Courses

PHASE I

HUMAN ANATOMY 504-131D. The structure of the human body is studied by means of dissection, predissected specimens, lectures, tutorials and audio-visual presentations (closed circuit TV, films, and film loops). The course includes developmental, surface and radiological anatomy and an introduction to clinical anatomy. (Course coordinator: Dr. D.G. Osmond)

Texts: E.K. Sauerland, *Grant's Dissector,* 7th ed. (Williams and Wilkins Co, 1974); J.C.B. Grant, *An Atlas of Anatomy,* 6th ed. (Williams and Wilkins, 1972); and one of the following: R.S. Snell, *Clinical Anatomy for Medical Students,* 1st ed. (Little, Brown & Co, 1973); E. Gardner, D.J. Gray and R. O'Rahilly, *Anatomy,* 3rd ed. (W.B. Saunders, 1969); W.H. Hollinshead, *Textbook of Anatomy,* 2nd ed. (Hoeber, 1967); R.T. Woodburne, *Essentials of Human Anatomy,* 4th ed. (Oxford University Press, 1969).

EMBRYOLOGY. This course of human developmental anatomy is integrated with the course in Human Anatomy.

Texts: J. Langman, *Medical Embryology,* 2nd ed. (Williams and Wilkins, 1969); K. Moore, *The Developing Human,* 1st ed. (Saunders, 1973).

HISTOLOGY 504-121D. The study, by means of the light and electron microscope, of various types of cells and of the structure of various tissues and organs. This course includes laboratory sessions during which sections of a variety of tissues and organs are systematically analyzed. (Course Coordinator: Dr. Y. Clermont)

Texts: A.W. Ham, *Histology,* 7th ed. (Lippincott, 1974); W. Bloom and D.W. Fawcett, *A Textbook of Histology,* 10th ed. (Saunders, 1975); E.J. Reith and M.H. Ross, *Atlas of Descriptive Histology,* 2nd ed. (Harper Row, 1970).

CENTRAL NERVOUS SYSTEM 524-121B. The Department of Anatomy is a major contributor to this Interdisciplinary Course. See Section 5.22.

Electives

Major electives are offered during Phases II and III. Details are published in the "Calendar of Elective Programs" and further information can be obtained in the General Office from the Director of the Program.

Graduate Courses

For graduate courses, see the *Announcement of the Faculty of Graduate Studies and Research.*

5.2 ANESTHESIA

Anesthesia is based on the Basic Sciences which are principally acquired during Phase I of the Medicine curriculum. During this phase ecture demonstrations are conducted in resuscitative techniques by anesthetists as part of the Emergency Medicine course.

In Phases II and III during surgical rotations a series of lecture demonstrations in anesthesia related topics are given and the opportunity afforded to spend two weeks with an anesthetist in the operating room for practical experience.

Electives

Major electives are offered during Phases II and III. Details are published in the "Calendar of Elective Programs" and further information can be obtained in the General Office from the Director of the Program.

5.3 BIOCHEMISTRY

Required Courses

PHASE I

BIOCHEMISTRY 507-121D. Lectures and clinical demonstrations are given, covering basic biochemistry with special relationship to disease processes. (Course coordinator: Prof. Peter Braun)

BIOCHEMISTRY 507-122D. Topics in biochemistry. By special permission of department only.

ENDOCRINOLOGY 524-141B.
GROWTH AND DEVELOPMENT 524-241A. The Department of Biochemistry is a contributor to these Interdisciplinary Courses. See Section 5.22.

Electives

A limited number of students in Phases II and III may spend their elective periods in the Department. Students will be assigned original research projects under the direction of a member of its staff. They will also take part in all Departmental and group seminars and audit graduate courses. Students who plan to spend all elective periods on one project will be particularly welcome and may hope to complete a useful piece of research. Details are published in the "Calendar of Elective Programs" and further information can be obtained in the General Office from the Director of the Program.

Other Courses

For students who are interested in additional studies in Biochemistry, current undergraduate and graduate courses in the Department are recommended. (See the *Announcements of the Faculty of Science and the Faculty of Graduate Studies and Research.)*

5.4 BIOMEDICAL ENGINEERING UNIT

Electives

Major electives are offered during Phases II and III. Details of this program are published in a separate "Elective Catalogue," and further information can be obtained in the General Office from the Director of the Program.

Graduate Program

The BioMedical Engineering Unit provides opportunities for interdisciplinary research and training in collaboration with other departments. Graduate courses are offered for students with engineering or biomedical backgrounds. See *Announcement of the Faculty of Graduate Studies and Research.*

5.5 EPIDEMIOLOGY AND HEALTH

Required Courses

PHASE I

EPIDEMIOLOGY 513-121J. A series of lectures, exercises and discussions dealing with the nature and scope of epidemiology. Problems of health and illness, the nature of the medical task, and directions for medicine and society will be considered. Topics include, for example, changing patterns of health and the present system of medical care in Quebec.

MEDICAL PRACTICE AND SOCIAL RESPONSIBILITY (given jointly with the Department of the History of Medicine.) In a series of two-hour sessions, the economic and social implications of medical practice are explored, particularly with respect to social and personal values and priorities as they relate to sickness and health. This course is a continuation of Epidemiology 513-121J.

PHASE II

BIOLOGY OF DISEASE 524-221J. The Department of Epidemiology and Health participates in this Interdisciplinary Course. See Section 5.22.

Electives

The Department offers two types of elective. *Research electives* are open to students in Phases II and III, and may be linked with a summer research project. These electives may take one of two forms: a) students having a

special interest in a field of work within the province of the Department's activities are welcome to pursue it on a tutorial basis with a member of the staff; and b) students may collaborate in research projects which are in progress. *Course electives* are available to students who wish to participate in graduate courses and projects; they may in this way obtain credit towards an M.Sc. degree. For a listing of these courses see the *Announcement of the Faculty of Graduate Studies and Research.*

Details are published in the "Calendar of Elective Programs" and further information can be obtained in the General Office from the Director of the Program.

5.6 FAMILY MEDICINE

PHASE III

The Family Medicine Stream will provide students with a clinical experience dealing with the physical and psychological problems which are encountered over the entire life cycle of human beings. Work in a group practice of family physicians and experience with various community agencies is an important aspect of this stream. Lectures and seminars complement the clinical work. Individual student log books will serve to document and evaluate the experience. .

5.7 HISTORY OF MEDICINE

Required Courses

PHASE I

HEALTH AND THE HEALER IN THE WEST 522-121A. A series of 15 one-and-a-half hour lectures tracing the patterns of health and disease from antiquity to modern times and the development of the medical profession.

MEDICAL PRACTICE AND SOCIAL RESPONSIBILITY (given jointly with the Department of Epidemiology and Health. For description, see that Department's listing.)

From time to time, and at the request of other departments, single lectures are given on the history of special subjects within courses being taught by those departments.

Electives and Options

The Department offers a wide range of electives and first and fourth year options in many aspects of the social sciences and humanities as they relate to medicine. For details see the Options Catalogue and the "Calendar of Elective Programs." For additional information, consult the general office of the Department.

5.8 MEDICINE

Required Courses

PHASES I and II

BEHAVIOURAL SCIENCES 524-161D.
EMERGENCY 524-151B.
ENDOCRINOLOGY 524-141B.
BIOLOGY OF DISEASE 524-221J.
INTRODUCTION TO CLINICAL SCIENCES 524-231D.

The Department of Medicine is a contributor to these Interdisciplinary Courses. See Section 5.22.

PHASE II

BLOCK TEACHING IN MEDICINE 526-321A/B. In this twelve week course, the student has the opportunity to build further on the clinical skills developed in the Course on Introduction to Clinical Sciences. The ward is the laboratory, wherein the student sees in the patients assigned, the living embodiment of the conditions described in the textbooks. The clinical experience gained from reading and from examination of patients leads to development of confidence and acumen, as well as to the ability to prepare a meaningful written record, which like a laboratory report, is carefully scrutinized by clinical instructors. Speciality areas of Dermatology, Ophthalmology, Neurology, Radiology, Clinical Pharmacology, Electrocardiology, all contribute to the student's experience.

By the end of the course the student is expected to be capable of handling competently all the duties of a clinical clerk.

PHASE III

The Department of Medicine will be responsible for a variety of offerings in PHASE III of the medical curriculum. Most of the students from all four streams will rotate through general medicine and in addition, students in the medicine stream will be offered rotations in related medical specialties.

At this level of training, the student accepts the responsibility for the initial work-up, the completion of the written record, the differential diagnosis (or problem list), the plan of investigation, the progress notes, and the discharge summary of each patient assigned. By constant reading, by discussions with his resident team, and by case presentations, clinical skills are further developed. In attendance at follow-up clincs, the student learns the results of his therapeutic efforts on the wards. A judicious selection of specialty conferences also assists in this process.

Electives

Major electives are offered during Phases II and III. Details are published in the "Calendar of Elective Programs" and further information can be obtained in the General Office from the Director of the Program.

Experimental Medicine

See *Announcement of the Faculty of Graduate Studies and Research.*

5.9 MICROBIOLOGY AND IMMUNOLOGY

Required Courses

PHASE I

MICROBIOLOGY AND IMMUNOLOGY 528-221A. A general introduction to Microbiology and Immunology is offered in the second year of Phase I in preparation for the infectious disease portion of the BIOLOGY OF DISEASE course. Lectures and demonstrations deal with the general nature of the various groups of microorganisms, i.e., the bacteria, fungi, viruses, protozoan parasites and helminths of medical importance and the methods by which they are studied particularly for diagnostic purposes. Sterilization, disinfection and chemo-therapeutic agents are covered. Basic immunology is dealt with as are host-parasite interrelationships. The course is concluded by a systematic survey of the major groups of pathogenic microorganisms.

PHASE II

BIOLOGY OF DISEASE 524-221J. The Department of Microbiology and Immunology is a major contributor to this Interdisciplinary Course. See Section 5.22.

Electives

Major electives are offered during Phases II and III. Details are published in the "Calendar of Elective Programs" and further information can be obtained in the General Office from the Director of the Program.

Other Courses

The Department offers a range of courses leading to the Honours B.Sc. in Microbiology and is well-equipped for graduate research leading to the M.Sc., M.Sc.A. and Ph.D. degrees. Training in clinical microbiology is available in the service laboratories of the Royal Victoria Hospital and the Montreal Neurological Institute located in the Department. See the *Announcements of the Faculty of Science and the Faculty of Graduate Studies and Research.*

5.10 NEUROLOGY AND NEUROSURGERY

Required Courses

PHASES I AND II

CENTRAL NERVOUS SYSTEM 524-121B. The Department of Neurology and Neurosurgery is a major contributor to this Interdisciplinary Course. See Section 5.22.

NEUROPATHOLOGY. Given in conjunction with the courses in Pathology and Biology of Disease.

INSTRUCTION IN CLINICAL EXAMINATION OF THE NERVOUS SYSTEM. Given in conjunction with the Introduction to Clinical Sciences course. See Interdisciplinary Courses, Section 5.22.

PHASE II

CLINICS AND CONFERENCES. In conjunction with the Departments of Medicine and Surgery.

PHASE III — STREAM OPTIONS

Some of the students in the Medicine stream and all of the students in the Psychiatry stream will receive rotations in clinical Neurology.

Electives

Major electives are offered during Phases II and III. Details are published in the "Calendar of Elective Programs" and further information can be obtained in the General Office from the Director of the Program.

Graduate Courses

Courses are offered leading to the M.Sc. and Ph.D. degrees. See *Announcement of the Faculty of Graduate Studies and Research.*

5.11 OBSTETRICS AND GYNECOLOGY

Required Courses

PHASE I

BEHAVIOURAL SCIENCES 524-161D.
EMERGENCY 524-151B
GROWTH AND DEVELOPMENT 524-241A.

The Department of Obstetrics and Gynecology contributes to these Interdisciplinary Courses. See Section 5.22.

PHASE II

BIOLOGY OF DISEASE 524-221J. The pathophysiology of pregnancy is taught in a segment of this integrated course.

INTRODUCTION TO CLINICAL SCIENCES 524-231D. The Department of Obstetrics and Gynecology contributes to this Interdisciplinary Course. See Section 5.22.

OBSTETRICS AND GYNECOLOGY 534-321A/B. A four-week period is allocated to Obstetrics and Gynecology during Phase II. The course is offered three times during this Phase and follows in each instance, immediately after eight weeks of surgery. The course of lectures, demonstrations and clinical exposure is designed to establish a core Obstetrical and Gynecological experience with emphasis on its derivation from the relevant Basic Sciences. This course is required as a prerequisite for electives in

the McGill Department of Obstetrics and Gynecology.

PHASE III

In Phase III, the following courses and electives are offered to enlarge and enrich the Basic Course of Phase II.

Students in the Surgical stream who have chosen the Obstetrics and Gynecology option can be assured of an 8 week clinical clerkship, well balanced in practical and theoretical experience.

For students selecting the Medicine Stream, a combined Neonatology-Obstetrical option can be taken as part of the Pediatric branch. Two clinical centres will operate this option. The student will find the course intensive; combining, as it does, antenatal care, the identification of High Risk pregnancies, intrapartum care and the follow-up of normal and sick infants. During the course students will perform, under staff supervision, the duties of clinical clerks in Case Rooms and Nurseries. They must be prepared to live in and assume continuing care of the patients allocated to them.

Students in the Family Practice Stream will have a four week rotation in office and community hospital Obstetrics and Gynecology.

Electives

Any students who feel the need for further study in the subject before going on to their chosen postgraduate fields are advised to take an elective in Obstetrics and Gynecology. The choice of suitable electives is wide. Enquiries from students for counsel on suitable study courses or practical experience should be directed to: Dr. R.A.H. Kinch of the Montreal General Hospital, or to Dr. T. Primrose of the Royal Victoria Hospital, either directly or through the Dean's office.

Texts: Compulsory for all students:
Dilts, P.V., Jr., Greene, J.W. Jr., Roddick, J.W. Jr., *Core Studies in Obstetrics and Gynecology;* Recommended: Oxorn, H., and Foote, W.R., *Human Labour and Birth,* 3rd. Edition, (New York, Appleton, 1975); Definitive Textbooks for further study: Hellman, L.M., and Pritchard, J., *Williams Obstetrics,* 14th Edition, (Appleton, N.Y., 1971); Jeffcoate, T.N.A., *Principles of Gynecology,* 4th Edition, (Butterworth, London 1975)

5.12 OPHTHALMOLOGY

Required Courses

PHASE II

INTRODUCTION TO CLINICAL SCIENCES 524-231D. As part of Introduction to Clinical Sciences, the various tests used in routine examination of the eye are demonstrated. Instruction in the use of ophthalmoscope is emphasized. See Interdisciplinary Courses, Section 5.22.

PRACTICAL CLINICAL OPHTHALMOLOGY. Practical Clinical Ophthalmology including OPHTHALMOSCOPY is taught at the Montreal General, Royal Victoria and Jewish General Hospitals in conjunction with the Medicine rotation.

PHASE III

In the Medicine Stream Option there will be a combined Ophthalmology-Radiology rotation. Each student will rotate for a two-week period in one discipline followed by a two-week period of the other. These options will take place at the Montreal General, Royal Victoria, Montreal Children's and Jewish General Hospitals. Each student will function as a clinical clerk in the respective Eye Department.

Electives

Major electives are offered during Phases II and III. Details are published in the "Calendar of Elective Programs" and further information can be obtained in the General Office from the Director of the Program.

Texts: Scheie & Albert, *Adler's Textbook of Ophthalmology,* 8th ed. (Saunders, 1969); Vaughan, Asbury, Cook, *General Ophthalmology,* 6th ed. (Lange, 1971); Frank W. Newell, *Ophthalmology,* 2nd ed. (Mosby, 1969).

References: W.S. Duke-Elder, *System of Ophthalmology,* 12 vols. (Kimpton, 1958-72); Hogan & Zimmerman, *Ophthalmic Pathology,* 2nd. ed. (Saunders, 1962); W.S. Duke-Elder, *Parson's Diseases of the Eye,* 15th ed. (Longman, 1970).

Postgraduate Program

See *Announcement of the Faculty of Graduate Studies and Research.*

5.13 OTOLARYNGOLOGY

Required Courses

PHASE I

OTOLARYNGOLOGY. An introductory course in clinical anatomy pertaining to the ear, nose and throat is presented during Phase I in cooperation with the Department of Anatomy.

PHASE II

INTRODUCTION TO CLINICAL SCIENCES 524-231D. The Department of Otolaryngology is a contributor to this course, providing instruction in otolaryngological history taking and methods of physical examination.

OTOLARYNGOLOGY. "Block Time" clinical instruction is given to small groups of students as part of the Phase II Surgery rotation. In these sessions didactic lectures are given relating to ear, nose and throat disorders and the students are given the opportunity to examine hospital patients if the group size permits.

Electives

The Department of Otolaryngology offers elective opportunities in both research and clinical studies. Details are published in the "Calendar of Elective Programs" and further information can be obtained in the General Office from the Director of the Program.

Graduate Program

See *Announcement of the Faculty of Graduate Studies and Research.*

5.14 PATHOLOGY

Required Courses

PHASE I

GENERAL PATHOLOGY 546-121J. This course is largely a self-preparation program taught in seminars. It covers the principles of general pathology and their relationship to commonly encountered diseases. (Course Coordinator: Dr. D. Kahn)

PHASE II

BIOLOGY OF DISEASE 524-221J. The Department of Pathology is a contributor to this Interdisciplinary Course. See Section 5.22.

COURSE IN APPLIED PATHOLOGY. Weekly clinico-pathological conferences are offered in conjunction with the Medicine rotation. (Course Administrator: Dr. J. Knaack.)

PHASE III

SURGICAL PATHOLOGY STREAM OPTION. Students in the surgical stream will spend 4 weeks participating in the daily activities of an active surgical pathology laboratory. Students in the Obstetrics and Gynecology branch of the Surgical Stream will have a week rotation in gynecological pathology and diagnostic cytology.

Electives

Major electives are offered during Phases II and III. Details are published in the "Calendar of Elective Programs" and further information can be obtained in the General Office from the Director of the Program.

Postgraduate Courses

See the *Announcement of the Faculty of Graduate Studies and Research.*

5.15 PEDIATRICS

Required Courses

PHASE III

PEDIATRICS 543-421A/B. Clerkship in pediatrics as a member of a clinical service, provides the opportunity for experience in the management of pediatric problems under supervision. The clerkship includes ward and ambulatory rotations at the Montreal Children's Hospital; and newborn experience at either the Jewish General Hospital or the Royal Victoria Hospital. The clerks participate in a series of core-material conferences in addition to the regularly scheduled educational program of the hospitals. (Coordinator: Dr. Allen H. Neims)

PEDIATRIC STREAM OPTIONS. The Department of Pediatrics participates in three of the four streams in Phase III. A portion of the students from the Medicine and Psychiatry streams will have an 8 week rotation in General Pediatrics while all of the students in the Family Practice stream will have a 4-week program in Ambulatory Pediatrics. In addition, students in the Pediatric branch of the Medicine stream will be offered a 4-week rotation in Obstetrics and Neonatology. This last rotation is offered conjointly with the Department of Obstetrics and Gynecology.

Electives

Twenty major elective opportunities available in Phase II and III including Clinical and Ambulatory Pediatrics, Pediatric sub-specialties and pediatric research, including Biochemical Genetics, Endocrinology, Neonatology, Nephrology and Cardiorespiratory investigation. Details are published in the "Calendar of Elective Programs" and further information can be obtained in the General Office from the Director of the Program.

5.16 PHARMACOLOGY AND THERAPEUTICS

The program of instruction in Pharmacology and Therapeutics is designed to provide a systematic coverage of the pharmacodynamics of the more important groups of drugs, the factors that control and modify their effects, and the basis for selection and use of drugs in the treatment of disease.

Required Courses

PHASE I

PHARMACOLOGY AND THERAPEUTICS 549-221A. An introductory course concerned primarily with the pharmacodynamics of those drugs most frequently encountered in clinical practice.

PHASE II

PHARMACOLOGY AND THERAPEUTICS. The department contributes to the Biology of Disease course emphasizing the pharmacological basis for the selection of drugs and the use of these drugs in the treatment of disease.

PHASE III

PHARMACOLOGY AND THERAPEUTICS. A variety of seminar courses covering selected areas of pharmacology is offered. Students choose one or more of these courses in areas of their special inter-

est. The seminars are intended to be a look in depth into special subjects rather than broad general reviews.

Electives

Facilities are available for a limited number of students to undertake research in pharmacology in any year of their medical course or during the summer. Work in clinical pharmacology can also be arranged for students in Phases II and III. Details are published in the "Calendar of Elective Programs" and further information can be obtained in the General Office from the Director of the Program.

5.17 PHYSIOLOGY

Required Courses

PHASE I

MEDICAL PHYSIOLOGY 552-121D Lectures and Laboratories. An advanced course on the functioning of body systems. Emphasis is on aspects of system physiology relevant to disease mechanisms and clinical function testing. Topics include the physiology of blood and body fluids, circulation, central and peripheral nervous system, respiration, excretion, digestion, immunity. (Course Coordinator: Dr. C. Polosa)

CENTRAL NERVOUS SYSTEM 524-121B.
ENDOCRINOLOGY 524-141B.

The Department of Physiology contributes to these Interdisciplinary Courses. See Section 5.22.

Electives

Details are published in the "Calendar of Elective Programs" and further information can be obtained in the General Office from the Director of the Program.

OTHER COURSES

For other undergraduate and graduate courses see the *Announcement of the Faculties of Arts and Science and Graduate Studies and Research.*

5.18 PSYCHIATRY

Required Courses

PHASE I

BEHAVIOURAL SCIENCE 524-161D. The Department of Psychiatry is a major contributor to this Interdisciplinary Course. See Section 5.22.

PHASE III

PSYCHIATRY 555-321A/B. Eight week block training to acquaint all students (core program) with the examination of patients and understanding of some of the major factors involved in abnormal behaviour. Diagnostic procedures, psycho-therapeutic and physical methods of treatment will be among the aspects covered. Students will be provided with tutors on a group basis and will also have an opportunity to become conversant with certain more specialized areas of the field of psychiatry. An attempt will be made to provide a comprehensive exposure to current theoretical models and treatment approaches in psychiatry, to indicate the relevance of certain concepts and attitudes to non-psychiatric medical practice, and to supply well-supervised clinical experience which is patient-oriented and responsibility-centered. (Course Coordinator: Dr. R.A. Ramsay)

PSYCHIATRY STREAM. In addition to 8 weeks of Neurology and 8 weeks of Medicine and/or Pediatrics, students choosing this stream will receive an 8-week rotation with intensive clinical experience in the areas of Psychosocial Medicine, Consultation Psychiatry, Emergency Psychiatry, and Brief Psychotherapy.

Electives

Details are published in the "Calendar of Elective Programs" and further information can be obtained in the General Office from the Director of the Program.

Graduate Courses

For information regarding the Diploma Course in Psychiatry and courses leading to the M.Sc. degree in Psychiatry, see the *Announcement of the Faculty of Graduate Studies and Research.*

5.19 DIAGNOSTIC RADIOLOGY

Required Courses

PHASE I

NORMAL ROENTGEN ANATOMY. In co-operation with the Department of Anatomy. (Professor Nogrady)

ROENTGEN DEMONSTRATIONS OF PHYSIOLOGY. In co-operation with the Department of Physiology. (Professor Fraser and Staff)

PHASE II

BIOLOGY OF DISEASE 524-221J. The Department of Diagnostic Radiology is a contributor to this Interdisciplinary Course. See Section 5.22.

SEMINARS IN DIAGNOSTIC RADIOLOGY. These are held weekly for students during their "block time" in Medicine and Surgery.

PHASE III

DIAGNOSTIC RADIOLOGY STREAM OPTIONS. During Phase III the students in the Medicine stream will receive a 4-week rotation in a combined Diagnostic Radiology — Ophthalmology program while students in the Surgery stream will receive a 4-week rotation in Diagnostic Radiology emphasizing diseases of surgical import. In addition, students from all streams during their "clinical clerkship" attend regular conferences with the Department of

Diagnostic Radiology and the Clinical Departments of the teaching hospitals of McGill.

Electives

Major electives are offered during Phases II and III. Details are published in the "Calendar of Elective Programs" and further information can be obtained in the General Office from the Director of the Program.

5.20 THERAPEUTIC RADIOLOGY

Required Courses

PHASES I AND II

INTRODUCTION TO THERAPEUTIC RADIOLOGY. Includes the basic principles and applications of Radiation Physics, Radiobiology, and Radiopathology of conditions treated by means of ionizing radiation. Given in conjunction with Pathology and Biology of Disease courses.

PHASE II

CLINICAL THERAPEUTIC RADIOLOGY. Teaching is integrated with the clinical rotations.

PHASE III

CLINICAL THERAPEUTIC RADIOLOGY. Continuation of the clinical program initiated in Phase II.

Electives

Major electives are offered during Phases II and III. Details are published in the "Calendar of Elective Programs" and further information can be obtained in the General Office from the Director of the Program.

Graduate Courses

Diploma in Therapeutic Radiology. See *Announcement of the Faculty of Graduate Studies and Research.*

5.21 SURGERY

Required Courses

PHASE I

BEHAVIOURAL SCIENCE 524-161D.
EMERGENCY 524-151B.

The Department of Surgery is a contributor to these Interdisciplinary Courses. See Section 5.22.

PHASE II

BIOLOGY OF DISEASE 524-221J.
INTRODUCTION TO CLINICAL SCIENCES 524-231D.

The Department of Surgery is a contributor to these Interdisciplinary Courses. See Section 5.22.

SURGERY 564-321A/B. During the surgical rotation, the student is provided with a variety of learning experiences, so that he may learn the principles of surgery. Much of the teaching is didactic either in The Montreal General Hospital or The Royal Victoria Hospital. The student is also assigned to a surgical service where he may write case reports, act as a dresser and assist at operations. The learning experiences include lectures, case presentations, seminars, tutorial sessions, special core curriculum conferences, bedside teaching, participation in regular service and ward rounds, visits to the Emergency Department, and clinical pathological conferences. (Course Co-ordinators: Drs. E.D. Monaghan and L. Ogilvy)

PHASE III

In Phase III of the new curriculum, students on a surgical stream will spend eight weeks as a clinical clerk in General Surgery and four weeks in an Orthopedics/Trauma Service. Students on a Medical Stream will spend four weeks as a clinical clerk in either General Surgery or a Surgical Specialty.

Surgical Diseases of Children

Instruction in the surgical diseases of children is given during the Pediatrics rotation.

Orthopedic Surgery

Principles of physical diagnosis of the musculoskeletal system are taught during the course on Introduction to Clinical Sciences in Phases I and II.

The principles of Orthopedic Surgery are covered during the course on Surgery in Phase II. An attempt is made to outline broadly the content of adult Orthopedics, children's Orthopedics and fractures.

Phase III clinical clerks in the surgery stream will generally spend four weeks in Orthopedic Surgery.

Urology

Lectures are given in Phase II during the surgery rotation. Subject coverage includes symptoms and signs of significance, congenital anomalies, obstructive uropathy, calculous disease, genito-urinary infections, abnormalities of the external genitalia, patho-physiology of mucturition and neoplastic disease of the genito-urinary tract.

Electives

Major electives are offered in Surgery, Orthopedic Surgery and Urology during Phases II and III. Details are published in the "Calendar of Elective Programs" and further information can be obtained in the General Office from the Director of the Program.

5.22 INTERDISCIPLINARY COURSES

Required Courses

PHASE I

BEHAVIOURAL SCIENCES 524-161D. This course aims at facilitating medical students' familiarity with

the impact of disease on a patient's style of living, his socio-economic security and his family. It covers the tasks in life as well as various styles in living from infancy to old age. Seminars are grouped along various themes and are developed around selected case material, films, and audio-visual aids. The subject matter is opened up directly by patients and developed by faculty. The student body is divided into groups to provide an opportunity to meet and discuss informally related issues with senior resident staff and members of faculty. Lectures and demonstrations — 79 hours (Course Coordinator: Dr. H. Caplan).

CENTRAL NERVOUS SYSTEM 524-121B. This course consists of an integrated series of lectures, laboratory classes and clinical demonstrations having to do with anatomical, physiological, biochemical and behavioural aspects of the nervous system organization which have particular importance in neurological medicine, thereby preparing the student for the clinical neurology teaching that will be given in the later phases of the medical curriculum. (Course Coordinator: Dr. Donald Lawrence)

EMERGENCY MEDICINE 524-151B. This course consists of a series of twenty sessions given in the first year providing an introduction to the principles of first aid and emergency medicine. The required text is *Emergency Care* by Grant and Murray. (Course Coordinator: Dr. E.D. Monaghan)

ENDOCRINOLOGY 524-141B. This course is conducted in a series of fifty-minute lectures and is organ-oriented. Sequentially, the adrenal cortex, the thyroid, the parathyroid, the anterior pituitary, and male and female gonads are covered. Each organ is viewed from the point of view of physiology, biochemistry, anatomy and clinical physiopathology. In the final hours, the human menstrual cycle and the physiology, anatomy and clinical testing of the neuroendocrine system are covered. (Course Coordinator: Dr. J.M. McKenzie)

GROWTH & DEVELOPMENT 524-241A. This course is designed to follow the major basic science course material and to illustrate how the stage of growth and development modifies the physiologic and pathologic responses of the organism. It looks at the role genetics, environmental, nutritional and hormonal factors play during the four main periods of growth — early development and major organogenesis, late fetal life, post-natal life to puberty, and puberty. A chairman for each of these sections is responsible for providing continuity for each unit as well as avoiding repetition by participating faculties. There is heavy emphasis on clinical correlation. (Course Coordinator: Dr. Eleanor Colle)

PHASE I and II

INTRODUCTION TO CLINICAL SCIENCES 524-231D. The course objective is to provide students the opportunity to make their first meaningful contact with patients. In so doing they learn, under supervision, how to take a history, conduct an examination of each of the body systems, create problem lists and arrive at reasonable diagnoses. This course, beginning in September of Year II and completed by mid-January, is the direct responsibility of the Department of Medicine, which is assisted in the teaching and supervision by the Departments of Surgery and Pediatrics. The specialty areas of Obstetrics and Gynecology, Neurology, Anesthesia, Orthopedics, Urology and Plastic Surgery also have an input. (Course Coordinator: Dr. J.L. McCallum)

PHASE II

BIOLOGY OF DISEASE 524-221J. An integrated course taught under the auspices of Epidemiology and Health, Microbiology and Immunology, Pathology, and Pharmacology, utilizing teachers from the entire medical faculty as required. The emphasis of the course will be on the pathophysiology of common disease states, and an attempt will be made to present a balanced approach to major diseases stressing factors that will influence prevention, control and treatment. It will be held primarily at the McIntyre Medical Sciences Building but small group sessions will be held at the Royal Victoria Hospital and the Montreal General Hospital where they will be integrated with students' medical and surgical rotations. (Course Coordinators: Drs. James C. Hogg and John Richardson)

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Faculty of

MUSIC

1976/77

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The University reserves the right to make changes without prior notice to the information contained in this publication, including the alteration of various fees schedules and the revision or cancellation of particular courses.

Faculty of
MUSIC

1976—77

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CALENDAR FOR SESSION 1976–77

1976

May 13, Thurs. to May 21, Fri.	Entrance auditions and placement tests for applicants in Music.
May 24, Mon.	VICTORIA DAY. Administrative Offices closed.
June 24, Thurs.	ST. JEAN BAPTISTE DAY. Administrative Offices closed.
July 1, Thurs.	CANADA DAY. Administrative Offices closed.
Aug. 30, Mon. and Aug. 31, Tues.	Supplemental examinations in lecture courses in Music.
Sept 1, Wed. to Sept. 3, Fri.	Placement tests, ensemble auditions and counselling of students in Music.
Sept. 6, Mon.	LABOUR DAY. Administrative Offices closed.
Sept. 7, Tues. to Sept. 10, Fri.	Counselling and registration of Music students in the Strathcona Music Building.
Sept. 10, Fri.	I.D. cards for Music: 8:30 a.m. to 5 p.m. in Sir Arthur Currie Gym.
Sept. 8, Wed. to Sept. 17, Fri.	Registration for Graduate Studies.
Sept. 13, Mon.	Instruction begins in Music.
Sept. 13, Mon. to Oct. 1, Fri.	Course Change Period in Music.
Sept. 27, Mon. to Oct. 1, Fri.	Supplemental and Deferred practical examinations.
Sept. 28, Tues	Late Registration.
Oct. 11, Mon.	THANKSGIVING DAY. Lectures cancelled. Administrative Offices closed.
Oct. 29, Fri.	Deadline for withdrawing (W) from a "A" courses in Faculty of Music.
Dec. 10, Fri.	Last day of lectures in Department of Theory courses and in ensembles.
Dec. 13, Mon. to Dec. 17, Fri.	Practical examinations and class tests in Music.
Dec. 17, Fri.	Last day of Fall Term.

1977

Jan. 7, Fri.	Winter Term registration for new students in Music.
Jan. 10, Mon.	Winter Term begins in Music.
Jan. 10, Mon. to Jan. 28, Fri.	Winter Term Course Change Period in Music. Deadline for withdrawing (W) from "D" courses in Faculty of Music.
Feb. 11, Fri., and Feb. 12, Sat.	Mid-term weekend holiday (Winter Carnival). Lectures cancelled.
Feb. 25, Fri.	Deadline for withdrawing (W) from "B" courses in Faculty of Music.
Mar. 14, Mon. to Mar. 18, Fri.	Entrance auditions for applicants in Music.
Apr. 7, Thurs.	Last day of lectures in Department of Theory courses and in ensembles.
Apr. 8, Fri. to Apr. 11, Mon. (incl.)	EASTER. Lectures cancelled. Administrative Offices closed.
Apr. 12, Tues. to Apr. 15, Fri.	Entrance auditions for applicants in Music.
Apr. 15, Fri.	Last day of Winter Term.
Apr. 18, Mon. to Apr. 22, Fri.	Examinations in lecture courses in Music.
Apr. 25, Mon. to May 6, Fri.	Practical examinations in Music.
May 12, Thurs. to May 20, Fri.	Entrance auditions and placement tests for applicants in Music.
May 23, Mon.	VICTORIA DAY. Administrative Offices closed.

PREFACE

The Conservatorium of Music was established in 1904 and the Faculty of Music in 1920. Formerly housed in various buildings belonging to the University, the Faculty moved in 1971 to one location, the spacious and modernized Strathcona Music Building, formerly the main section of the Royal Victoria College.

The University's Report of 1971 to the Conseil des Universités stated that "during the past ten years Music had the biggest growth rate of any McGill Faculty". This growth is reflected in the current student enrolment figure of approximately five hundred at Undergraduate and Graduate levels, with close to forty full-time and almost fifty part-time academic staff.

The Faculty's large Strathcona Music Building houses a substantial library containing over twenty two thousand monograph-volumes, bound journals and scores, as well as seven thousand recordings; an Electronic Music studio consisting of three individual studios equipped with synthesizers, generators, filters, mixers and multitrack tape recorder; ample classroom, studio, and practice space, student-lounge and cafeteria; and the recently completed Pollack Concert Hall (capacity: six hundred) with its large stage (including an orchestra pit), a recording studio, projection room, and spacious back-stage facilities (dressing rooms, a large rehersal room and storage space).

Our students and staff generate a lively performance activity: over two hundred concerts and other public events during the 1975-1976 session alone, including presentations by our Symphony Orchestra, the Faculty Choirs, Bands, Chamber Ensembles, Jazz Bands, the Opera Studio, and recitals by staff and student soloists.

The Strathcona Music Building is part of the McGill Campus centrally located on Montreal's main artery, Sherbrooke Street, and within easy walking distance of the city's famous Place des Arts complex, the French-English theatre district, large department stores and a station of the city subway system conveniently named "McGill".

1 STAFF

1.1 ADMINISTRATIVE OFFICERS

ROBERT E. BELL, C.C., B.A., M.A. (U.B.C.), Ph.D. (McG.), D.Sc. (U.N.B., Laval), LL.D. (Tor.), F.R.S., F.R.S.C. **Principal and Vice-Chancellor**

EIGIL PEDERSEN, B.A. (Sir G. Wms.), M.A., (McG.), Ed.D. (Harv.) **Vice-Principal (Academic)**

LEO YAFFE, B.Sc., M.Sc. (Man.), Ph.D. (McG.), F.C.I.C., F.A.P.S., F.R.S.C. **Vice-Principal (Administration)**

ALLAN C. McCOLL, D.F.C., B.Com. (McG.), C.A. **Vice-Principal (Finance)**

WALTER F. HITSCHFELD, B.A.Sc., (Tor.), Ph.D. (McG.), F.R. Met. S. **Vice-Principal (Research)**

COLIN M. McDOUGALL, D.S.O., B.A. (McG.) **Secretary-General**

JEAN-PAUL SCHULLER, B.A. (Ott.) **Registrar**

PAUL PEDERSEN, B.A. (Sask.), M.M. (Tor.), Ph.D. (Tor.) **Dean of the Faculty, Director of the McGill Preparatory School of Music**

RICHARD LAWTON, B.Mus., M.Mus. (Indiana) **Chairman, Department of Performance**

DONALD MACKEY, Mus.B. (Tor.) **Chairman, Department of School Music, Secretary of the Faculty (Academic), University Organist, Vice-Director of the McGill Preparatory School of Music**

BRUCE MINORGAN, B.Mus. (U.B.C.), M.A. (Tor.) **Chairman, Department of Theory**

1.2 MEMBERS OF THE FACULTY COUNCIL

THE DEAN
THE PRINCIPAL
THE VICE-PRINCIPAL *(Academic)*
THE VICE-PRINCIPAL *(Administration)*
THE CHAIRMAN OF THE DEPARTMENT OF PERFORMANCE
THE CHAIRMAN OF THE DEPARTMENT OF SCHOOL MUSIC
THE CHAIRMAN OF THE DEPARTMENT OF THEORY
THE SECRETARY OF THE FACULTY *(Academic)*
ALL FULL-TIME ACADEMIC STAFF *(Lecturers to Professors)*
SIX REPRESENTATIVES-AT-LARGE FROM AMONG PART-TIME STAFF
THE LIBRARIAN
THE CHAIRMAN OF THE DEPARTMENT OF MUSIC IN THE FACULTY OF EDUCATION
PRESIDENT, MUSIC UNDERGRADUATES, SOCIETY
PRESIDENT, GRADUATE MUSIC STUDENTS ASSOCIATION
FIVE UNDERGRADUATE STUDENTS (Comp.; History; Perf.; School Music; Theory)
FOUR GRADUATE STUDENTS (Comp.; Musicology; Performance; Theory)

1.3 FACULTY ADMINISTRATION

555 Sherbrooke St. West, Montreal H3A 1E3
Telephone: 392-4501

MISS DIANA ROSS, B.Ed. (McG.) *Student Records Officer*

MISS VERONICA SLOBODIAN
Administrative Assistant (Admissions)

MRS. DIANE RASYTINIS *Dean's Secretary*

MRS. ARNEE HOLLOWAY, B.A. (Lond.)
Departmental Secretary (Dept. of Performance)

T.B.A.
Departmental Secretary (Dept. of School Music)

MRS. ELIZABETH McKENZIE
Departmental Secretary (Dept. of Theory)

MRS. MARIA JERABEK *Concert Manager*

MICHEAL A. BARTUCCIO
Stage and Production Manager (Pollack Concert Hall)

MRS. CISLEY DANIEL
Senior Clerk (Budget Control)

1.4 FACULTY LIBRARY

555 Sherbrooke St. West, Montreal H3A 1E3
Telephone: 392-4530

MISS KATHLEEN M. TOOMEY, B.A., B.Ed., M.L.S. (McG.) *Librarian*

MS. ALENA PASCUAL, B.A. (McG.)
Audio Room Supervisor

1.5 THE McGILL PREPARATORY SCHOOL OF MUSIC

555 Sherbrooke St. West, Montreal H3A 1E3
Telephone: 392-4550

PROFESSOR DONALD MACKEY, Mus.B. (Tor.)
Vice-Director

PROFESSOR ROSE GOLDBLATT, A.R.C.M. (Lond.)
Co-ordinator of Local Centres

MISS DOROTHY FEINBERG *Secretary*

1.6 COUNCILS AND STANDING COMMITTEES

FACULTY COUNCIL
DEPARTMENTAL COUNCIL — PERFORMANCE
DEPARTMENTAL COUNCIL — SCHOOL MUSIC
DEPARTMENTAL COUNCIL — THEORY
CHAIRMEN'S COMMITTEE
CONCERT AND LECTURE COMMITTEE
GRADUATE STUDIES COMMITTEE
HONORARY DEGREES COMMITTEE
MUSIC LIBRARY ADVISORY COMMITTEE
SCHOLARSHIP COMMITTEE
STUDENT ADMISSION AND PROGRESS COMMITTEE
AREA COMMITTEES: PERFORMANCE
Brass—Ensemble — Keyboard—Percussion — Strings—Voice — Woodwinds
AREA COMMITTEES: THEORY
Composition — Ear Training —History Theory

1.7 TEACHING STAFF

Professors —

HELMUT BLUME, Graduate, Staatliche Akademische Hochschule für Musik, Berlin (Sabbatical Leave 1976-77)
ALEXANDER BROTT, L.Mus. (McG.), Graduate, Juilliard School of Music, (Hon.) Mus.Doc. (Chicago Conservatory College), (Hon.) LL.D. (Qu.), F.R.S.A. Conductor-in-Residence
MARVIN DUCHOW, Dipl. (Curtis Institute of Music); B.Mus., (McG.), B.A. (N.Y.U.), M.A.(Roch.), (Hon.), Mus.Doc. (Chicago Conservatory College)
BENGT HAMBRAEUS, Fil Kand (B.A.), Fil lic (Ph.D.) (Uppsala)
KELSEY JONES, L.Mus., B.Mus. (Mt.All.), B.Mus., Mus.Doc. (Tor.)

Associate Professors—

BRIAN CHERNEY, Mus.Bac., Mus.M., Ph.D. (Tor.)
EDWARD CULBREATH, B.Sc. (Music) (Mannes College, N.Y.C.), M.Mus. (Yale) *(Sabbatical leave 1976-77)*
LUCIANO DELLA PERGOLA, Graduate, Royal Conservatory, Bucharest
PAUL HELMER, B.A. (Tor); M.A., Ph.D. (Col.)
STEPHEN KONDAKS
ALCIDES LANZA, Graduate, Instituto Torcuato Di Tella, Buenos Aires
RICHARD LAWTON, B.Mus. (McG.), M.Mus. (Indiana)
DONALD MACKEY, Mus.B. (Tor.)
BRUCE MATHER, B.Mus., (Tor.); M.A. (Stan.); Mus.Doc. (Tor.)
BRUCE MINORGAN, B.Mus. (U.B.C.), M.A. (Tor.)
DOROTHY MORTON, Graduate, Conservatoire de Musique de Québec
PAUL PEDERSEN, B.A. (Sask.), M.Mus., Ph.D., (Tor.)
CHARLES REINER, Graduate, Conservatoire de Genève, Switzerland

Assistant Professors—

PIERRE BELUSE, Graduate, Conservatoire de Musique de Québec; Montreal Symphony
MARY CYR, B.A., M.A., Ph.D. (Berkeley)
GERALD DANOVITCH, Graduate, Conservatoire de Musique de Québec
ELIZABETH DAWSON, L.Mus. (McG.), L.R.S.M. (Lond.)
EDITH DELLA PERGOLA, Graduate, Royal Conservatory, Bucharest
MAURICIO TUKS, B.Mus. (Juilliard)
ROBERT GIBSON, B.S., M.F.A., Ph.D. (Minn.)
ROSE GOLDBLATT, A.R.C.M. (Lond.)
JOHN GREW, B.Mus. (Mt. All.), M.Mus. (Mich.)
DONALD HUGHES, L.Mus., B.Mus., (McG.), M.A. (Eastman)
PAUL LOYONNET, Graduate, Conservatoire de Paris
PAUL MARKS, B.A. (U.C.L.A.), M.M. (Tulsa)
KENNETH MEEK, L.Mus., (McG.) B.Mus. (Tor.)

DONALD PATRIQUIN, A.R.C.C.O., B.Sc. (Bishop's), B.Mus. (McG.)., M.Mus. (Tor.)
EUGENE PLAWUTSKY, L.Mus., B.Mus. (McG.), M.A. (Tor.)
JOHN REA, B.Mus. (Wayne State), M.Mus. (Tor.)
WAYNE RIDDELL, B.Mus. (McG.)
JANET SCHMALFELDT, B.A., B.M. (Lawrence), M.A., M.M.A., M.Ph. (Yale)
JAN SIMONS
BANG SONG SONG, B.A., M.A. (Seoul Nat. U.), Ph.D. (Wesleyan)
DONALD STEVEN, B.Mus. (McG). M.F.A. (Prin.)
LUBA ZUK, L.Mus. (McG.), Graduate, Conservatoire de Musique de Québec

Lecturers—

DAVID BACH, B.Sc., B.Mus. (McG.), M.F.A. (Prin.)
ARMAS MAISTE, L.Mus., B.Mus. (McG.); Montreal Symphony
TOM PLAUNT, B.A. (Tor.), Graduate, Nordwestdeutsche Musikakademie, Detmold, Germany
SIDNEY ROSENBERG, Graduate, Curtis Institute of Music, Montreal Symphony

Assistant Staff—

KATHLEEN ANDERSON, B.Mus. (McG.)
NORAIR ARTINIAN, B.Mus., M.Mus. (Montr.); M.Sc. (Music) (Juilliard)
KEVIN AUSTIN, B.Mus., M.M.A. (McG.)
ANTONIN BARTOS, Graduate, State Conservatory, Prague
JEANNE BAXTRESSER, B. Mus., Juilliard; Montreal Symphony
PETER BOWMAN, Montreal Symphony
NEIL CHOTEM
BETTY DOROSCHUK, L.Mus., B. Mus. (McG.)
MARIE-CHRISTINE DYKE-GABILLET
STEPHEN FENTOK
MILDRED GOODMAN, Montreal Symphony
MONIQUE GRENIER
TED GRIFFITH, Montreal Symphony
EMILIO IACURTO, Graduate, Conservatoire de Musique de Québec; Montreal Symphony
SONIA JELINKOVA, L.Mus. (McG.); Graduate, Curtis Institute of Music; Montreal Symphony
TOM KENNY
ABE KESTENBERG
DORIS KILLAM, L.Mus. (McG.)
MARY KIRBY, L.Mus.s., B.Mus. (McG.)
THOMAS LEDERER, Montreal Symphony
ESTHER MASTER, Graduate, Conservatoire de Musique de Québec
PIERRETTE MATHER, B. Mus. (Laval), B. A., Artist's Diploma (Tor.)
CARMEN MEHTA
ANTONIO NARDUCCI
DINA MARIA NARICI
PIERRE PERRON, B. Mus. (McG.), Specialist's Diploma in Kodály Method, Franz Liszt Academy, Budapest
PENELOPE PETERS, B. Mus. (McG.)
WINSTON PURDY, B. Mus. (McG.)
JAMES RANTI, B. Mus. (Manhattan School of Music)
CINDY SHUTER, B. Mus. (Tor.)
DOROTHY SLAPCOFF, B. Sc. (Music) (N.Y.U.)
KARL STEINER, Graduate, State Academy, Vienna
MICHAEL STRUTT
ELLIS WEAN, Montreal Symphony
BARRY WIESENFELD, L.Mus. (McG.)
LJERKA WOLLMARKER, Graduate, Music Academy, Zagreb
KENNETH WOODMAN, B. Mus. (McG.)

Visiting Staff—

MARIANO J. ETKIN, San Miguel de Tucuman, Argentina (Under the auspices of the Cultural Exchange Program of the Federal Government of Canada)
KENNETH GILBERT, Graduate, Conservatoire de Quebec
MIKLOS TAKACS, Bacc. en Musique, Franz Liszt Academy, Budapest

1.8 DEPARTMENTAL CHAIRMEN, ASSISTANTS AND CO-ORDINATORS

DEPARTMENT OF PERFORMANCE

Chairman — PROF. RICHARD LAWTON
Co-ordinators —
Brass: PROF. ROBERT GIBSON
Keyboard: PROF. ROSE GOLDBLATT
Percussion: PROF. PIERRE BELUSE
Strings: PROF. STEPHEN KONDAKS
Voice: I.B.A.
Woodwinds: PROF. GERALD DANOVITCH
Choral Ensembles: PROF. WAYNE RIDDELL
Instrumental Ensembles: PROF. EUGENE PLAWUTSKY

DEPARTMENT OF SCHOOL MUSIC

Chairman — PROF. DONALD MACKEY
Co-ordinators —
Keyboard/Choral: PROF. WAYNE RIDDELL
Orchestral: PROF. DONALD HUGHES

DEPARTMENT OF THEORY

Chairman — PROF. BRUCE MINORGAN
Graduate Committee Chairman:—
PROF. BENGT HAMBRAEUS
Co-ordinators —
Composition : PROF. DONALD STEVEN
Ear Training: PROF. LUBA ZUK
History: PROF. PAUL HELMER
Theory: PROF. JANET SCHMALFELDT

ELECTRONIC MUSIC STUDIO

Director — PROF. ALCIDES LANZA
Technician: MR. ERIC JOHNSTONE

2 CONCERTS 1975

During 1975, close to 200 concerts were presented, among them:

32 concerts
by the Faculty's student ensembles, e.g.
McGill Symphony Orchestra
Opera Studio
Jazz Workshop Bands
Jazz Improvisation groups
Concert Choir
Faculty Choirs
McGill Wind Ensemble
Faculty Wind Ensembles
Chamber Music groups
Contemporary Music Ensemble

83 recitals
by student soloists and ensembles, as well as staff

13 Graduation recitals

5 concerts
by staff and students of the Electronic Music Studio

14 concerts
by visiting artists and ensembles, among them
Early Music Quartet (Munich) — in cooperation with the Goethe Institut Montreal and l'Université de Montréal
Kenneth Gilbert, harpsichordist
Stewart Grant, oboist and Dom André Laberge, harpsichordist
Detlef Kraus, pianist — in cooperation with the Geothe Institut Montreal
Robert Mayerovitch, pianist
Nigel Rogers, tenor, and Bradford Tracey, harpsichordist — in cooperation with the CBC
The York Winds, with John Hawkins, pianist — in cooperation with the CBC
Denes Zsigmondy, violinist, and Anneliese Nissen, pianist — in cooperation with the Goethe Institut Montreal

and the 33 concerts
of the "McGill Music Month" given by staff, students and graduates of the Faculty of Music in celebration of the inauguration of the Faculty's new Pollack Concert Hall, April 10th — May 8th:

April 10 & 11
Opening Concert: McGill Symphony Orchestra — Concert Choir — Jazz Band

April 12
Jazz at McGill: The Jazz Workshop Bands

April 13, 3:00 p.m.
Graduation Recital: Carolyn Christie, flute

April 13, 8:30 p.m.
Graduation Recital: Jo-Anne Bentley, mezzo-soprano

April 14
Recital: Paul Helmer, pianist

April 15, 1:00 p.m.
Faculty Choir — Faculty Wind Ensemble

April 15, 8:30 p.m.
McGill Wind Ensemble

April 16
Student Chamber Ensembles

April 18
Opera at McGill: McGill Opera Studio: Retrospective 1956-1975

April 19, 3:00 p.m.
Graduation Recital: Michael Kara, viola

April 19, 8:30 p.m.
Contemporary Music Ensemble

April 20, 3:00 p.m.
Graduation Recital: Colin Ryan, cello

April 21
Graduation Recital: Zabel Manukyan, piano

April 22
Recital: Mariana Paunova, mezzo-soprano — Barry Wiesenfeld, piano

April 23
An Evening of Bach Harpischord Concerti: Student Chamber Ensemble and soloists

April 24
The McGill Fine Arts Brass

April 25
Student Chamber Ensembles

April 26
Music for Percussion

April 27, 3:00 p.m.
Graduation Recital: Christine Ertell, flute

April 27, 8:30 p.m.
Graduation Recital: Betsy Goldberg, harpsichord

April 28
Recital: Robert Silverman, pianist

April 29
Recital: Jan Simons, baritone — Paul Helmer, piano

May 1
New Music at McGill

May 2
Student Chamber Ensembles

May 3, 3:30 p.m.
Graduation Recital: Stephen Green, cello

May 3, 8:30 p.m.
Student Chamber Ensembles

May 4, 3:00 p.m.
Graduation Recital: Robert Bardston, cello

May 4, 8:30 p.m.
The Montreal Chamber Orchestra; Jean Carignan, fiddle

May 5
Recital: Ireneus Zuk, pianist

May 6
Recital: Kathleen Anderson, soprano — Winston Purdy, baritone — Charles Reiner, piano

May 7
Recital: Edward Rusnac and Michael Strutt, lute and guitar duo

May 8
Closing Concert: McGill Chamber Orchestra, Alexander Brott, director

In addition, our small and large student ensembles played on numerous occasions for elementary and secondary schools as well as CEGEPs in the Montreal area.

During the summer, 12 concerts sponsored by external organizations were presented in Pollack Concert Hall, among them:

Société de musique contemporaine du Québec (New Music Week)
Composers/Performers Group (New Music Week)
Marek Jablonski, pianist (Polish Society of Arts and Sciences)
Maureen Forrester, contralto (Int'l Association of Music Librarians)
McGill Chamber Orchestra (Int'l Association of Music Librarians)
Piano Duo Dorothy Morton and Esther Master (CBC)
Le Groupe Baroque de Montréal (CBC)
Sigmund Nimsgern, baritone (Goethe Institut Montreal)
Eduardo Melgar, tenor (Institute of Culture and Fine Arts of Venezuela)

The Société de musique contemporaine du Québec is presenting its 75/76 concert season in Pollack Concert Hall.

3 GENERAL INFORMATION

3.1 GRADUATES

SPRING CONVOCATION, 1975

Doctor of Music honoris causa

NEWMARK, John, O.C.

Other spring graduates were listed in the 1975-76 *Music Announcement.*

FALL CONVOCATION, 1975

Licentiate in Music Diploma

BONIN-BOUCHARD, Laure, B. Mus. — Montreal
Voice

HOMZY, Pamela, B. Mus. — Cleveland, Ohio
Distinction in Saxophone

Bachelor of Music Degree

ADAMS, Bruce Kenneth — Dorval
Major in Music History, Distinction

BARDSTON, Robert, L. Mus. — Louisville, Ky.
Major in Performance; High Distinction in Cello

BAYLEY, Jonathan Gardner — Fredericton, N.B.
Major in Performance (Flute)

CICI, Avril Susan — New York, N.Y.
Major in Performance; High Distinction in Piano

ERTELL, Christine — North Bennington, Vt.
Major in Performance, Distinction in Flute

GREEN, Stephen — Toronto, Ont.
Major in Performance; Distinction in Cello

MARMERSTEIN, Bassia, L. Mus. — Montreal
Major in Performance (Piano)

MOFFATT, John Allan — Montreal
Major in Performance; Distinction in Viola

NEWMAN, Nancy — Montreal
Major in Performance; Distinction in Saxophone

O'CONNELL, Audrey — Montreal
Major in School Music

SCHRODER, Johann — Pearl River, N.Y.
Major in Performance; Distinction in Piano

SPIRK, Waltraud — Montreal
Major in Music History

WALKER, Catherine — Montreal
Major in Performance (Cello)

WILSON, Stephen, B. Com., B.A. — Kingston, Ont.
Major in Music History

Master of Musical Arts Degree

HOENICH, Judith — Montreal
Performance (Piano)

3.2 SCHOLARSHIPS AND BURSARIES

NOTE: Details of University scholarships, bursaries and loans open to undergraduates in all Faculties will be found in the *Undergraduate Scholarships and Awards Announcement* issued by the University and available at the Registrar's office.

Application for all Music Scholarships, bursaries, prizes, and/or loans must be made to the Dean of the Faculty. Details are listed in the *Undergraduate Scholarships and Awards Announcement.*

A limited number of entrance awards, reserved for Canadian students and covering part of the first-year tuition fee, are awarded on the basis of musical talent as demonstrated at competitive auditions in October, or, in the case of Composition majors, by original compositions submitted. Awards to students in the upper years are determined by their achievements during the preceding academic year.

3.3 FINANCIAL AID

Information on Government Bursaries and Loans as well as on University financial assistance is available at the McGill Student Aid Office, 3465 Peel Street.

3.4 DEGREES AND DIPLOMAS OFFERED

DEGREE OF BACHELOR OF MUSIC (B.MUS.)

The degree of Bachelor of Music can be obtained in any one of five major fields:

Composition (Major and Honours) The curriculum in Composition is designed for those students whose interest and talent lie in the field of creative music.

History (Major and Honours) The curriculum in History is intended for those interested in the scholarly disciplines of music and as a preparation for subsequent concentration in musicology.

School Music (Major) This program covers the area of music in the schools and provides the practical and theoretical training required by those who are planning a career as music teachers.

Performance (Major and Honours) The degree program in Performance is available to those wishing to specialize in a practical major (Instruments, Voice, or Conducting) and to combine these studies with a substantial program of theoretical and academic subjects.

Theory (Honours only) This program is designed for those who wish to specialize in the study of music theory. Interdisciplinary programs relating music with other arts and the sciences are available.

Programs normally require three years of study following the Quebec Diploma of Collegial Studies or four years of study following secondary school elsewhere.

DEGREE OF MASTER OF MUSICAL ARTS (M.M.A.)

The degree of Master of Musical Arts, which the Faculty of Music offers in conjunction with the Faculty of Graduate Studies and Research, can be obtained in one of four fields:

Composition This program is designed for those planning on a career as professional composers and/or teachers of composition and allied subjects. It also prepares the student for doctoral studies in this field.

Musicology This program provides training in the techniques of musicological research and prepares the student for doctoral studies in musicology.

Theory This program is designed for those who wish to do research in some specialized area of music theory. Interdisciplinary studies relating music with other arts and the sciences are encouraged. The program also prepares the student for doctoral studies in these areas.

Performance The aim of this program is to develop the candidate's ability as a performer to a high professional level in conjunction with advanced theoretical and historical studies relating to performance.

DEGREE OF DOCTOR OF MUSIC (D.Mus)

The degree of Doctor of Music is available in Composition.

For details of these graduate programs, please consult the *Announcement of the Faculty of Graduate Studies and Research.*

LICENTIATE IN MUSIC (L.Mus.)

The Licentiate in Music can be obtained through a three-year program specially designed for advanced instrumentalists and singers who wish to concentrate on the practical subject of their choice while limiting their theoretical studies to basic areas in History, Theory and Ear Training. This program is open only to those students whose proficiency in their practical subject is at least at the level of CEGEP* graduation. A CEGEP diploma, however, is not required.

*CEGEP = **C**ollège d'**E**nseignement **G**énéral **E**t **P**rofessionnel, the Quebec equivalent of a Junior College.

THE CONCERT DIPLOMA

This is a post-Licentiate diploma designed as a two-year course and available only to specially gifted instrumentalists and singers who have the proven talent and capacity for a professional career as performers.

3.5 MUSIC CREDIT OPTIONS IN OTHER FACULTIES

The Faculty of Music offers three groups of courses that may be taken for credit by students in other faculties.

One group, which includes courses that deal with music theory and history, is part of the music undergraduate curriculum. These courses may be taken by those who have offered Music as a high school graduation subject or have the theoretical equivalent.

The second group of courses represents Ensemble classes open to those students who are advanced players of orchestral instruments or singers: Chamber Music, Wind Ensemble, Concert Choir, Opera Studio, Symphony Orchestra. Admission is by audition only.

The third group consists of music credit options especially designed for students in other faculties. These courses are listed in the current *Announcement of the Faculty of Arts.*

3.6 OPTIONS FOR "SPECIAL" STUDENTS

Individuals wishing to take one or more courses without registering in a McGill degree or diploma program may be admitted as Special students if they possess the necessary requirements for admission to the course(s) concerned.

3.7 McGILL PREPARATORY SCHOOL OF MUSIC

For information on function, policy, courses, examination requirements for Grade Certificates, admission, fees, Local Centres, etc., please consult the *Announcement of the McGill Preparatory School of Music* obtainable at the Faculty Office, 555 Sherbrooke Street West, Montreal, Que H3A 1E3.

3.8 ADMISSION TO THE FACULTY OF MUSIC

APPLICATION PROCEDURE

All inquiries regarding admission to the B. Mus., L. Mus., or Concert Diploma programs should be directed to the Admissions Office, Faculty of Music, McGill University, 555 Sherbrooke Street West, Montreal, Que. H3A 1E3.

In order to ensure early consideration, applications should be made by March 1. Applications received after this date will be considered if places are still available.

Applications should be accompanied by the non-refundable application fee of $15, an official transcript of the applicant's academic record up to the December preceding his September entry, and a detailed description of the applicant's musical background and training including photostats of diplomas, certificates, and/or transcripts.

ADMISSION REQUIREMENTS B.MUS.

The normal admission requirement to the B.Mus. degree programs is the Quebec Diploma of Collegial Studies (Music Concentration) with a Practical Level equivalent to McGill Preparatory Collegial I and Theory/Ear Training Collegial I. Applicants for a Performance Program must be able to demonstrate a performance level equivalent to McGill Preparatory Collegial III. Graduates of secondary schools outside of Quebec will also be considered. See below under B.MUS.–NON-QUEBEC APPLICANTS.

All applicants must perform an audition in their main practical subject of approximately 15 minutes' duration, either live or on tape. The student should choose material that will represent different musical styles, and that will reveal his musicianship and technical proficiency to best advantage. For dates of entrance auditions, please refer to frontispiece.

Applicants seeking exemption from program requirements on the basis of advanced music studies or work done at other universities should list such studies in detail and have an official transcript of their record submitted to the Dean. Transfer students will be required to sit placement examinations in Ear Training, History, and Theory, in May or early September to determine their course levels.

For C.E.E.B. tests please turn to page 15

APPROXIMATE EQUIVALENTS TO ENTRANCE REQUIREMENTS IN PRACTICAL SUBJECTS

Quebec CEGEPS	CEGEP II
Toronto Conservatory	Grade 9
Western Board	Grade 9
Mount Allison	Grade 9
Associated Board of the Royal Schools of Music	Grade 7

Notes:

The above listing is intended only as a general guide.

Admissability in the performing area is at all times determined by audition.

Students wishing to major in performance should be one or two years more advanced, and be able, as well, to demonstrate potential as performers at their audition.

KEYBOARD PROFICIENCY TEST

Students, other than guitarists, entering any of the B.Mus. programs should be prepared to demonstrate keyboard proficiency sufficient to enable them to use the piano as a tool in their studies at McGill when they register for their first term. Those who are unable to do so will be registered with probationary status and must enrol in one or both of Keyboard Proficiency I (211-170A) and II (211-171B) until they shall have either passed both courses or successfully completed the test. (Keyboard players who have auditioned and been admitted to either the Major or Honours program in Performance are understood to be exempt from this requirement.)

The requirements of the test are as follows:

Dominant Seventh chords in all inversions, with resolutions.
Cadences and Progressions: V-I; IV-I; V-VI; I-IV-V-I; II_6-V; N_6-V-I; V^7-VI.
Some longer Progressions, eg. I-III-VI-II_6-I^6_4-V-I.
The $_4$ chord: cadential, passing, arpeggio, appoggiatura, and auxiliary.
Elementary figured bass.
Clefs–2-voice exercises with one voice in the tenor or alto clef.
Simple transposition in two parts.
Playing of two parts, one of which will be for a transposing instrument.
Sightreading of a simple piece.
Sightreading of individual lines from orchestral scores.
Playing a short prepared piece of a difficulty equivalent to McGill Preparatory Secondary Level III.

Students wishing to prepare for this test before entering the Faculty of Music may consult the following publications for preparatory material. (These books are not necessarily the required texts for the courses in Keyboard Proficiency.)

Scales and Chords, edited by Ernest A. Dicks (Frederick Harris)

Preparatory Exercises in Score-Reading, by R.O. Morris and Howard Ferguson (Oxford University Press)

Elementary Keyboard Harmony, by Maurice Lieberman (W.W. Norton)

Figured Harmony at the Keyboard, by R.O. Morris (Oxford University Press)

EXAMINATION DATES

The Keyboard Proficiency Test may be taken during the Music Enrolment Period in September or during the regular practical examination periods in December and May (see Section 3.14).

B.MUS.–NON-QUEBEC APPLICANTS

High School graduates (minimum schooling: 12 years) from other provinces and from abroad may apply for admission to any of the honours or major programs described in Section 4, leading to the Bachelor of Music degree, and may be admitted to a program of qualifying studies in the subjects listed below:

Title	*Course No.*	*Weight*
Melody and Counterpoint	211-110A	3 cr.
Elementary Harmony	211-111B	3 cr.
Ear Training (Moveable doh)	212-128A and 212-130B	
or Ear Training (Fixed doh)	or -129A,B and -131A,B	4 cr.
History Survey (Mediaeval, Renaissance, Baroque)	214-184A	3 cr.
History Survey (Classical, Romantic, 20th Century)	214-185B	3 cr.
Practical Study		4-8 cr.
Ensemble		2 cr.
Arts/Science elective		6 cr.
		Total: 28-32 cr.

Applicants who can demonstrate through auditions and placement tests (administered in May and September) that they have mastered the material in any of the above subjects will be given exemption from them and may proceed to more advanced courses (see Section 4).

SACU and/or C.E.E.B. TESTS

Canadian applicants are no longer required to write the tests of the Service for Admission to College and University (SACU).

Students from the United States must write the following College Entrance Examination Board tests: the two scholastic aptitude tests, the English composition test and any two other achievement tests. Students may obtain information about the tests, testing centres, etc., by writing to: The College Entrance Examination Board, Box 592, Princeton, New Jersey 08540, or: The College Entrance Examination Board, Box 1025, Berkeley, California 94701.

Students from overseas are not required to write the C.E.E.B. tests, and their applications are judged on their records in the national examinations of the country in which they have studied.

ADMISSION REQUIREMENTS L.MUS.–ALL APPLICANTS

In order to qualify for admission to the Licentiate program of the Faculty of Music, the applicant must have completed secondary school (eight academic subjects). The Quebec Diploma of Collegial Studies is not a requirement. The applicant's music qualifications must be McGill Preparatory Collegial Equivalent Level II (Instrument or Voice) and McGill Theory and Ear Training Secondary Level complete, or equivalent. An entrance audition ia also required.

The C.E.E.B. tests are not required for admission to the Licentiate program.

CONCERT DIPLOMA–ALL APPLICANTS

In order to qualify for admission to the Concert Diploma program, the candidate must have the Licentiate in Music of the McGill Faculty of Music or its equivalent and must pass a performance audition demonstrating the talent for a professional career as a performer.

3.9 ACADEMIC CREDIT TRANSFER AGREEMENT

Students wishing to take courses for credit towards their McGill degree at any other university in the province of Quebec should refer to the section entitled "Academic Credit Transfer Agreement" in the *General Announcement* for details.

3.10 CATEGORIES OF STUDENTS

Students are registered as:

a) **Full-Time:** those enrolled in a B. Mus. program and taking 24 or more credits each year or 12 or more credits per term, or in the L. Mus. or Concert Diploma program and taking 18 or more credits each year or 9 or more credits per term. To be considered for a University Scholarship, a student must have carried a minimum load of 27 credits.

b) **Part-Time:** those enrolled in a degree or diploma program, but who, because of special circumstances, are unable to take a full-time load as defined above.

c) **Special:** those who are not registered as proceeding towards a degree or diploma, but are permitted to take one or more courses. Special students in practical subjects may not register for less than one term (14 weeks)

and must notify the Secretary of the Department of Performance at least two weeks before the end of the term if they wish to continue lessons for another term.

d) **Visiting:** those proceeding towards a degree at another university, but who are taking one course or more at McGill for credit towards their home university's program.

Students enrolled in degree and diploma programs are classified as follows:

B.Mus. degree —

U1 Those who are registered for their first year of the Bachelor of Music degree at the University level (post-CEGEP).

U2 All students who are beyond the U1 level, but are not yet in their final year.

U3 Students registered for a selection of courses, which, if successfully completed, will fulfil the requirements of their program.

L.Mus. or Concert Diploma —

D1 Those who are registered for their first year of L.Mus. or Concert Diploma study at the University level.

D2 See "U2" above.

D3 See "U3" above.

3.11 LENGTH OF SESSION

The session extends from September to April, made up of two terms, the Fall Term and the Winter Term. Certain regular courses are offered during the Summer Session. Please consult the *Summer Session Announcement,* available in March.

3.12 FEES

The University reserves the right to make changes without notice in the published scale of fees.

Fees are refundable under conditions described in Section 4.3 of the *General Announcement* available from the Registrar's Office.

Tuition fee assessment is based on a per credit charge. The basic charge for tuition fees is $19.00 per credit and this fee includes all the regular charges of the University for registration, tuition, laboratories and libraries. Student Services fees and Students' Societies fees are separately assessed and must be paid at the same time as the tuition fees.

UNIVERSITY LEVEL STUDENTS
(Degree and Diploma Candidates)

Courses	*Fee per Credit*
Individual practical instruction	$19.00†
Ensembles	$19.00††
Other courses	19.00
Student Services fee (all full-time students)	70.00
Students' Society fee	27.00

†Students electing further courses in individual practical instruction above the requirements of the program will be charged an additional $420 per year or $210 per term; this also being the fee applied to those students taking a second major, in Performance *(e.g.* L.Mus. as a second program).

Students in other faculties taking individual practical instruction from the Music faculty will pay the fee of $420 (or $210 per term) instead of the per-credit fee for such instruction.

The application of the above rate of $19/credit for individual practical instruction is limited as follows:

I B.Mus. in School Music, History, Composition, Theory:
Practical Concentration
Maximum 2 years, 1 hour per week for 28 weeks

II B.Mus. in Performance:
Practical Major
Maximum 3 years, 1 hour per week for 28 weeks

III L.Mus. in Performance:
Practical Major
Maximum 3 years, 1 hour per week for 28 weeks

IV Concert Diploma:
Practical Major
Maximum 2 years, 1½ hours per week for 28 weeks

N.B. A full-time student (other than a Performance Major) wishing to take individual instruction in any practical subject with teachers other than those available to him in the Faculty may do so, at his own expense. A practical examination fee of $50 will be payable at the time of application for an examination. Students majoring in Performance are required to study under teachers on the staff of the Faculty of Music.

†† Special students in the Opera Studio will be charged $100 plus $20 administration fee each term.

PART-TIME, SPECIAL, AND VISITING STUDENTS

In addition to the per-credit tuition fees as listed above, the following fees will be assessed per term

a) If taking 9 or more credits per term:
Student Services $35.00
Students' Societies $13.50

b) If taking more than 5 but less than 9 credits per term:
Student Services $20.00*

Students' Societies	$ 5.00
c) If taking 5 credits or less per term:	
Student Services	$10.00*
Students' Societies	$ 5.00

SPECIAL FEES AND PENALTIES

Application for Admission	$15.00**
Late registration	25.00
Late payment fee (after specified date):	
1st 30 days	10.00
After 30 days	25.00
Graduation fee	10.00***
Duplicate Student Identity Card	5.00
Duplicate diploma	10.00
Certified transcript of student's record:	
First two copies each	1.00
Additional copies made at the same time, each	.25
Re-reading examination paper	10.00
Supplemental examinations, each written paper	10.00
Supplemental examinations, each practical	50.00
Changes in course after specified change of course period	5.00

* Excludes Athletics: At the discretion of the Director of Athletics, a student may participate in the Athletics program upon payment of an additional $30.00.

** Students already at McGill who are making application to a professional faculty or to the Faculty of Graduate Studies and Research are not required to pay this fee.

*** Graduation Fee: Applications by students who expect to graduate at the Spring Convocation must be filed by April 1st of each year and by those who expect to graduate at the Fall Convocation by September 1st of each year. An application form will be mailed to each eligible student and must be returned to the Registrar's Office together with the graduation fee of $10.00 by the appropriate date listed above. This fee will cover all expenses in connection with graduation including academic dress. It is the student's responsibility to ensure that his or her name is included in the graduation list.

Students who apply for practical examinations after the deadline (see 5.9 under Applications for Examinations) normally will not be permitted to sit an examination until the next regular period. In exceptional circumstances, permission may be given by the Chairman of the Department of Performance, but a fee of $15 will be charged to the student.

REGULATIONS FOR PAYMENT OF FEES

NEW STUDENTS

Students entering the University for the first time and those returning in Graduate Studies are required to pay their fees either by mail or in person at the Cashier's Office within 10 days after registration. For students registering in September the second instalment is due before January 15, 1977.

RETURNING STUDENTS

Returning students from the previous year (except in Graduate Studies) must pay one half of the total required fee by mail or in person to the Accounting Office before August 23, 1976, otherwise they will not be permitted to register. Instructions for paying fees in advance will be mailed to all returning students, either with their Sessional Reports of Standing or a short time later. Students who have been notified by the University of the award of a scholarship, bursary or student loan, and who require this award for payment of the first instalment of fees, must obtain permission to delay payment of fees from the Student Aid Office.

The second instalment is due January 15, 1977. A late payment fee as stated above is charged for payment after the specified dates.

LATE REGISTRATION

Students registering late must pay their fees at the time of registration, failing which they become subject to the late payment fee and the provisions of the following paragraph:

As soon as possible after the prescribed dates for the payment of fees the Chief Accountant will send to the Dean and the Registrar a list of the registered students who have not paid their fees. Reports of Standing, transcripts of records and diplomas will be withheld until such time as the fees are paid or a satisfactory arrangement is made with the Chief Accountant.

REGULATIONS CONCERNING WITHDRAWAL

A student who wishes to withdraw from the University or from certain courses, *whether or not he wishes to apply for remission of fees,* must secure the permission of the Chairman of his Department. The Student Records Office will supply the necessary form which must be completed and submitted. Students withdrawing from all their courses must attach their Student Identity Card to the withdrawal form. A student considering withdrawal is strongly advised to consult the Dean or Departmental Chairman before making a final decision. Fees for the term in which the student withdraws are refundable under conditions described in Section 4.3 of the *General Announcement* available from the Registrar's Office.

3.13 REGULATIONS

1. All students are required to be punctual at all classes and lessons.

2. Sessional results in theoretical subjects are calculated on the basis of both classwork and examinations. Students are warned that by missing the classwork they risk a sessional failure in the subject concerned.

3. A student may, with the permission of the instructor concerned, audit a class in which he has a personal interest. However, it should be noted that auditors are not registered for such courses, that the instructor is not expected to correct any assignments or papers done by an auditor, and that an auditor may neither write an examination in that subject nor receive any credit for such course.

4. The Faculty of Music utilizes a 4-point Course Credit System (A: 80-100% = 4; B: 65-79% = 3; C: 55-64% = 2; D: 45-54% = 1; F: 0-44% = 0) which operates as in the table below:

Course & Number		*Course Credit Weight*	*Mark Received*	*Grade Points*
Theory & Analysis	211-224D	6	B(3)	18
Ear Training	212-131D	4	C(2)	8
Piano	250-230A	2	A(4)	8
	250-230B	2	A(4)	8
English	120-E10D	6	B(3)	18
French	126-110D	6	C(2)	12
Choir	243-993A	1	C(2)	2
	243-993B	1	C(2)	2
	Total Credits	*28*		*Total Grade Pts. 76*

Grade Point Average: 76 ÷ 28 = 2.71

5. CONDITIONAL ADMISSIONS: Conditional Admission to a course may be granted only if the mark in the prerequisite course is "D" or "K" (Incomplete). Conditional Admissions will be reviewed by November 15. Students in their final year may be conditionally admitted to a course required for their degree.

6. COURSE CHANGES: Students are permitted to change courses and/or sections of a course during the first three-week period of classes in each term. Forms for this purpose are available at the Reception Desk of the Strathcona Music Building, 555 Sherbrooke Street West. (This time is referred to as the official Course Change Period.)

Late course change requests (other than changes imposed by the Faculty) will be accepted only with a late fee of $5. If a student's registration must be corrected after the Course Change Period to bring his record into conformity with the courses he is actually taking, he will be charged the $5 fee.

7. CONFIRMATION OF PROGRAM: Each student is responsible for his registration in the proper courses and programs. A Verification of Registration Form is sent to every student soon after the Course Change Period each term, and it is the student's responsibility to check it for errors. Students must bring any errors to the attention of the Student Records Officer, in writing. Students who expect to graduate at the end of the academic year are responsible to ensure that they are registered in all the courses required for graduation, and should indicate their intention to graduate on their Verification Form.

8. WITHDRAWALS: Withdrawal from any course after the end of the Course Change Period requires the special approval of the Department Chairman concerned and the Dean. In such cases the student's mark in the course will be "W". Withdrawal forms must be obtained from the Reception Desk at the Strathcona Music Building.

The final deadlines for withdrawing from courses are:

For a half course: The end of the seventh week of classes.

For a full-course: The end of the third week of classes in the Second Term.

N.B. A student who does not complete a course for which he is registered will receive a grade of "F".

9. INCOMPLETES: At the discretion of the instructor a mark of "K" (Incomplete) may be given to a student who, due to extenuating circumstances, has not finished the course work on time. The deadline for completion and submission of the required work shall be set by the instructor but may not be later than the end of the next Course Change Period. If the "Incomplete" is not removed by this time, the mark will be changed to "KF" (Incomplete Failed). Completion of the course will cause the "K" to be replaced by the mark earned on official transcripts.

A student who, in exceptional cases only, is given permission by his Department Chairman or the Student Progress Committee to leave a course indefinitely incomplete (without penalty) will receive the symbol "KK"; in which case, the student's Grade Point Average will be calculated without including this course.

10. ABSENT; The symbol "J" (Absent — 0 grade points) will be entered on the transcript of those students who were absent from the final examination or a major part of the course without previous authorization.

11. DEFERRALS: Deferred examinations are permitted in case of illness or other exceptional circumstances. A written request for the deferment of an examination must be submitted to the Department Chairman. A deferred examination will be entered as "L" which will be replaced on official transcripts by the actual mark when the examination is written.

12. SUPPLEMENTALS: Supplemental Examinations may be given at the discretion of the instructor. A student who receives a mark below 30% in a course is not permitted to take a supplemental examination but must repeat the course.

13. PROBATIONARY STANDING: A student whose GPA drops to between 1.5 and 1.99 is placed in probationary standing. A Performance Major who does not attain a B standing in his/her major field is placed in probationary standing. Such students may not register for more than 15 credits per term. A student in probationary standing must return to satisfactory standing within one year by obtaining a GPA of 2.5 or a CGPA of 2.0, otherwise he will be placed in unsatisfactory standing.

14. UNSATISFACTORY STANDING: A GPA of less than 1.5 places a student in unsatisfactory standing. Students in unsatisfactory standing must withdraw. They may be readmitted to probationary standing upon appeal to the faculty. Students in unsatisfactory standing for a second time will be required to withdraw permanently.

15. SATISFACTORY STANDING: Students in satisfactory standing may not register for more than 18 credits per term except by permission from their departmental chairman.

16. RE-READING OF EXAMINATIONS: A student wishing to have an examination paper re-read should apply in writing to the Office of the Dean or the Departmental Chairman. There is a fee of ten dollars which will be refunded if an error is found in the student's favour. If the mark given for the re-reading of the examination is the same or lower, there will be no refund. The mark given in the re-reading, whether higher or lower, will replace the mark originally given. Any request to have a term paper reassessed must be made directly to the professor concerned.

ENSEMBLE REGULATIONS

All full-time or part-time students in the B.Mus., L.Mus., and Concert Diploma programs who enrol for practical instruction are required to participate concurrently in sufficient ensemble courses to fulfill the minimum sessional ensemble requirement specified in their program.

Assignments to Faculty Ensembles (Orchestra, Bands, Choirs, Chamber Music, Opera Studio, Jazz Ensemble, etc.) are made at the time of enrolment and posted on the Department of Performance notice board. Reassignments may be made from time to time during the session and will be similarly posted. Students are responsible for informing themselves of these assignments and reassignments.

Students who have been assigned to these ensembles are reminded that regular attendance is mandatory. Membership in any non-Faculty ensemble (professional, student, amateur) is considered an extra-curricular activity which can be permitted only on the understanding that curricular assignments (rehearsals, concerts) take precedence at all times.

Students who fail to adhere to this rule will lose the required ensemble credit for the current term and will be obliged to make up the credit at a later date. In the case of repeated absenteeism in a subsequent term, a student will be asked to withdraw from the Faculty. (Written notice will be sent by the Ensemble Co-ordinator to those students whose attendance record is likely to result in either of the above consequences.)

3.14 GENERAL GRADUATION REQUIREMENTS FOR UNDERGRADUATE PROGRAMS

1. Completion of all courses and all proficiency requirements specified in the candidate's curriculum.
2. Minimum cumulative grade point average of 2.0.
3. Completion of a minimum of credits in residence at McGill University: (B.Mus.: 48 cr., L.Mus.: 36 cr., Concert Dip.: 26 cr.)

Graduation With Distinction: Any student completing the requirements for an undergraduate degree in the Faculty of Music with a cumulative grade point average of 3.6 will be graduated with *Distinction;* with a cumulative grade point average of 3.8, with *High Distinction.*

For additional information on courses and examinations please consult the Departmental Handbooks.

4.1 DEPARTMENT OF THEORY: Composition; History; Theory

B.Mus. WITH A MAJOR IN COMPOSITION

For prerequisite requrements for this program, see Section 3.8. (Non-Quebec Applicants)

Course Title	*Course No.*	*Course Credits*	*Total*
COMPOSITION			
Composition	213-240D	6	
Composition	213-245D	3	
Composition	213-340D	6	
Electronic Music	213-341A	3	
Electronic Music	213-342B	3	
Composition	213-440D	6	
			27
EAR TRAINING			
Ear Training (Fixed Dch)	212-229A,B	2	
Ear Training (Fixed Dch)	212-231A,B	2	
Ear Training (Fixed Dch)	212-329A,B	2	
Ear Training (Fixed Dch)	212-331A,B	2	
			8
THEORY			
Introductory Orchestration	211-260D	4	
Middle & Late 19th Century Theory & Analysis	211-310A,B	3	
20th Century Theory &Analysis	211-311A,B	3	
One of:			
Tonal Counterpoint	211-322D	6	
Modal Counterpoint	211-323D	6	
20th Century Analysis	211-427D	4	
			14 or 16
HISTORY ELECTIVES			6
PERFORMANCE			
Practical Concentration: 2 credits per term. Completion of Concentration Final Examination			8
Ensemble: 2 credits per year			6
MUSIC ELECTIVES			3
ARTS & SCIENCE ELECTIVES			
Three full courses or the equivalent — at least one must be a continuation course to the 300 level.			18
			90-92

B.Mus. WITH HONOURS IN COMPOSITION

For prerequisite requirements for this program, see Section 3.8. (Non-Quebec Applicants)

Course Title	*Course No.*	*Course Credits*	*Total*
COMPOSITION			
Composition	213-240D	6	
Composition	213-245D	3	
Composition	213-340D	6	
Electronic Music	213-341A	3	
Electronic Music	213-342B	3	
Composition	213-440D	6	
			27

EAR TRAINING

Ear Training (Fixed Doh)	212-229A,B	2	
Ear Training (Fixed Doh)	212-231A,B	2	
Ear Training (Fixed Doh)	212-329A,B	2	
Ear Training (Fixed Doh)	212-331A,B	2	
Dictation	212-432B	2	
			10

THEORY

Introductory Orchestration	211-260D	4	
20th Century Analysis	211-427D	4	
Orchestration	211-460D	4	
Two of:			
Tonal Counterpoint	211-322D	6	
Modal Counterpoint	211-323D	6	
19th Century Analysis	211-327D	4	
Fugue	211-522D	6	
Advanced Harmony	211-523D	6	
			22 or 24

HISTORY ELECTIVES 6

PERFORMANCE

Practical Concentration: 2 credits per term. Completion of Concentration Final Examination	8
Ensemble: 2 credits per year	6

ARTS & SCIENCE ELECTIVES

Three full courses or the equivalent — at least one must be a continuation course to the 300 level.	18
	97-99

Special Requirements:

Cumulative Grade Point Average: minimum 3.00
Composition 213-240D, 213-245D, 213-340D, and 213-440D — mark of A.

B.Mus. WITH A DESIGNATED MAJOR

(The courses comprising the Major field must be approved by the Theory Department prior to registration in the second year of the program.)
For prerequisite requirements for this program, see Section 3.8. (Non-Quebec Applicants)

Course Title	*Course No.*	*Course Credits*	*Total*
EAR TRAINING			
Ear Training (Fixed Doh)	212-229A,B	2	
Ear Training (Fixed Doh)	212-231A,B	2	
Ear Training (Fixed Doh)	212-329A,B	2	
Ear Training (Fixed Doh)	212,331A,B	2	
			8
THEORY			
Tonal Theory & Analysis I	211-210A,B	3	
Tonal Theory & Analysis II	211-211A,B	3	
Middle & Late 19th Century Theory & Analysis	211-310A,B	3	
20th Century Theory & Analysis	211-311A,B	3	
			12
HISTORY ELECTIVES			6

PERFORMANCE

Practical Concentration: 2 credits per term. Completion of Concentration Final Examiration	8
Ensemble: 2 credits per year	6

MUSIC ELECTIVES	12
FREE ELECTIVES	20
ARTS & SCIENCE ELECTIVES	
Three full courses or the equivalent — at least one must be a cotinuation course to the 300 level.	18
	90

B.Mus. WITH A MAJOR IN MUSIC HISTORY

For prerequisite requirements for this program, see Section 3.8 (Non-Quebec Applicants)

Course Title	*Course No.*	*Course Credits*	*Total*
HISTORY			
Mediaeval Music	214-380A	3	
Renaissance Music	214-381A	3	
Baroque Music	214-382A	3	
Classical Music	214-383B	3	
Romantic Music	214-384B	3	
Twentieth Century Music	214-385A	3	
EAR TRAINING			18
Ear Training (Fixed Doh)	212-229A,B	2	
Ear Training (Fixed Doh)	212-231A,B	2	
Ear Training (Fixed Doh)	212-329A,B	2	
Ear Training (Fixed Doh)	212-331A,B	2	
THEORY			8
Tonal Theory & Analysis I	211-210A,B	3	
Tonal Theory & Analysis II	211-211A,B	3	
Middle & Late 19th Century Theory & Analysis	211-310A,B	3	
20th Century Theory & Analysis	211-311A,B	3	
19th Century Analysis	211-327D	4	
MUSIC ELECTIVES (with Departmental Approval)			16
PERFORMANCE			3
Practical Concentration: 2 credits per term. Completion of Concentration Final Examination			8
Ensemble: 2 credits per year			6
FREE ELECTIVES			13
ARTS & SCIENCE ELECTIVES			
Three full courses or the equivalent — at least one must be a continuation course to the 300 level.			18
			90

B.Mus. WITH HONOURS IN MUSIC HISTORY

For prerequisite requirements for this program, see Section 3.8. (Non-Quebec Applicants)

Course Title	*Course No.*	*Course Credits*	*Total*
HISTORY			
Mediaeval Music	214-380A	3	
Renaissance Music	214-381A	3	
Baroque Music	214-382A	3	

Classical Music	214-383B	3	
Romantic Music	214-384B	3	
Twentieth Century Music	214-385A	3	
Proseminar in Musicology	214-499D	6	
			24

EAR TRAINING

Ear Training (Fixed Doh)	212-229A,B	2	
Ear Training (Fixed Doh)	212-231A,B	2	
Ear Training (Fixed Doh)	212-329A,B	2	
Ear Training (Fixed Doh)	212-331A,B	2	
			8

THEORY

Tonal Theory & Analysis I	211-210A,B	3	
Tonal Theory & Analysis II	211-211A,B	3	
Tonal Counterpoint	211-322D	6	
19th Century Analysis	211-327D	4	
20th Century Analysis	211-427D	4	
One of:			
Modal Counterpoint	211-323D	6	
Fugue	211-522D	6	
Advanced Harmony	211-523D	6	
			26

MUSIC ELECTIVES
(With Departmental Approval) 6

PERFORMANCE

Practical Concentration: 2 credits per term. Completion of Concentration Final Examination	8
Ensemble: 2 credits per year	6

ARTS & SCIENCE ELECTIVES

Three full courses or the equivalent to include a) German b) European History	18
	96

Special Requirements

Cumulative Grade Point Average: minimum 3.00
All History courses — mark of A or B in each.

B.Mus. WITH HONOURS IN THEORY

For prerequisite requirements for this program, see Section 3.8 (Non-Quebec Applicants)

Course Title	*Course No.*	*Course Credits*	*Total*
THEORY			
Physics of Music	198-224B	3	
Tonal Theory and Analysis I	211-210A,B	3	
Tonal Theory and Analysis II	211-211A,B	3	
Tonal Counterpoint	211-322D	6	
Modal Counterpoint	211-323D	6	
19th Century Analysis	211-327D	4	
Fugue	211-522D	6	
Advanced Harmony	211-523D	6	
20th Century Analysis	211-427D	4	
Proseminar in Music Theory	211-529D	6	
			47

EAR TRAINING

Ear Training (Fixed Doh)	212-229A,B	2	
Ear Training (Fixed Doh)	212-231A,B	2	
Ear Training (Fixed Doh)	212-329A,B	2	
Ear Training (Fixed Doh)	212-331A,B	2	
			8

HISTORY

History of Music Theory	214-489B	3	
History Electives		3	
			6

PERFORMANCE

Practical Concentraton: 2 credits per term. Completion of Concentration Final Examination	8
Ensemble: 2 credits per year	6

MUSIC ELECTIVES

(with Departmental Approval).	6

ARTS & SCIENCE ELECTIVES

Three full courses orthe equivalent — at least one must be a continuation course to the 300 level.	18
	99

Special Requirements:

Cumulative Grade Pont Average: minimum 3.00
All Theory courses — mark of A or B in each. 198-224B Physics of Music — mark of A or B.

B.Mus. WITH HONOURS IN THEORY AND (***) OPTION

For prerequisite requrements for this program, see Section 3.8 (Non-Quebec Applicants)

Course Title	*Course No.*	*Course Credits*	*Total*
THEORY			
Tonal Theory and Analysis I	211-210A,B	3	
Tonal Theory and Analysis II	211-211A,B	3	
Tonal Counterpoint	211-322D	6	
19th Century Analysis	211-327D	4	
20th Century Analysis	211-427D	4	
Proseminar in Music Theory	211-529D	6	
One of:			
Modal Counterpoint	211-323D	6	
Fugue	211-522D	6	
Advanced Harmony	211-523D	6	
			32
EAR TRAINING			
Ear Training (Fixed Doh)	212-229A,B	2	
Ear Training (Fixed Doh)	212-231A,B	2	
Ear Training (Fixed Doh)	212-329A,B	2	
Ear Training (Fixed Doh)	212-331A,B	2	
			8
HISTORY			
History of Music Theory	214-489B	3	
History Elective		3	
			6

PERFORMANCE

Practical Concentration: Completion of Concentration Final Examination	4 x 2	8
Ensemble: One per year	2 x 3	6
OPTION		
Courses in (***) approved by the Department of Theory in consultation with the other department concerned.		36
		96

Special Requirements

Cumulative Grade Point Average: minimum 3.00.
Mark of A or B in all Theory courses and Option courses.

(***) Options available in English, Linguistics, Mathematics, Philosophy and Psychology.

4.2 DEPARTMENT OF PERFORMANCE: Keyboard; Voice; Orchestral Instruments*

*Performance Specialization is available in: Violin, Viola, Cello, Bass, Guitar, Percussion, Flute, Oboe, Clarinet, Saxophone, Bassoon, French Horn, Trumpet, Trombone, Tuba, Piano, Organ, Harpsichord, Harp and Voice.

B.Mus. WITH A MAJOR IN PERFORMANCE (Keyboard)

For prerequisite requirements for this program, see Section 3.8. (Non-Quebec Applicants)

Course Title	*Course No.*	*Course Credits*	*Total*
PERFORMANCE			
Practical:			
Major (4 credits each term)			24
Ensemble:			
Choir or Studio Accompanying is required each year plus at least six credits of ensemble electives			min. 12
THEORY			
Tonal Theory & Analysis I	211-210A,B	3	
Tonal Theory & Analysis II	211-211A,B	3	
Middle & Late 19th Century Theory & Analysis	211-310A,B	3	
20th Century Theory & Analysis	211-311A,B	3	12
Ear Training (Fixed Doh)	212-229A,B	2	
Ear Training (Fixed Doh)	212-231A,B	2	
Ear Training (Fixed Doh)	212-329A,B	2	
Ear Training (Fixed Doh)	212-331A,B	2	8
History Electives			6
MUSIC ELECTIVES			10
ARTS & SCIENCE ELECTIVES			
Three full courses or the equivalent — at least one must be a continuation course to the 300 level.			18
			90

Special Requirements

A student majoring in Performance must achieve at least a B in his major field in the Intermediate Examination and in each subsequent term.

B.Mus. WITH A MAJOR IN PERFORMANCE (Voice)

For prerequisite requirements for this program, see Section 3.8. (Non-Quebec Applicants)

Course Title	*Course No.*	*Course Credits*	*Total*
PERFORMANCE			
Practical:			
Major (4 credits each term)			
Ensemble:			24
Choir is required each year, plus at least six credits of ensemble electives.			min. 12
THEORY			
Tonal Theory & Analysis I	211-210A,B	3	
Tonal Theory & Analysis II	211-211A,B	3	
Middle & Late 19th Century Theory & Analysis	211-310A,B	3	
20th Century Theory & Analysis	211-311A,B	3	
			12
Ear Training (Fixed Doh)	212-232A,B	2	
Ear Training (Fixed Doh)	212-234A,B	2	
Ear Training (Fixed Doh)	212-332A,B	2	
Ear Training (Fixed Doh)	212-334A,B	2	
History Electives			8
MUSIC ELECTIVES			6
ARTS & SCIENCE ELECTIVES			10
Three full courses or the equivalent — at least one must be a continuation course to the 300 level.			18
			90

Special Requirements

A student majoring in Performance must achieve at least a B in his major field in the Intermediate Examination and in each subsequent term.

At some point prior to graduation the Voice Major must furnish evidence of having completed Italian 132-205D and German 129-202D or their equivalent. This language requirement may be fulfilled by appropriate CEGEP courses, or as part of the Arts & Science Continuation above, or by extra University courses.

B.Mus. WITH A MAJOR IN PERFORMANCE (Orchestral Instruments)

For prerequisite requirements for this program, see Section 3.8. (Non-Quebec Applicants)

Course Title	*Course No.*	*Course Credits*	*Total*
PERFORMANCE			
Practical:			
Major (4 credits each term)			
Ensemble:			24
One of Choir, Orchestra or Band each year, plus at least 6 credits of ensemble electives			min. 12.
THEORY			
Tonal Theory & Analysis I	211-210A,B	3	
Tonal Theory & Analysis II	211-211A,B	3	
Middle & Late 19th Century Theory & Analysis	211-310A,B	3	
20th Century Theory & Analysis	211-311A,B	3	
			12
Ear Training (Fixed Doh)	212-229A,B	2	
Ear Training (Fixed Doh)	212-231A,B	2	

Ear Training (Fixed Doh)	212-329A,B	2	
Ear Training (Fixed Doh)	212-331A,B	2	8
History Electives			6
MUSIC ELECTIVES			10
ARTS & SCIENCE ELECTIVES			
Three full courses or the equivalent — at least one must be a continuation course to the 300 level.			18
			90

Special Requirements

A student majoring in Performance must achieve at least a B in his major field in the Intermediate Examination and in each subsequent term.

B.Mus. WITH A MAJOR IN PERFORMANCE (Orchestral Conducting)

For prerequisite requirements for this program, see Section 3.8. (Non-Quebec Applicants)

Course Title	*Course No.*	*Course Credits*	*Total*
PERFORMANCE			
Conducting	241-236D	4	
Conducting	241-336D	6	
Conducting	241-436D	8	18
Practical Concentration: (Completion of Concentration Final Exam)			8
Ensemble (One each semester)			6
THEORY			
Tonal Theory & Analysis I	211-210A,B	3	
Tonal Theory & Analysis II	211-211A,B	3	
Middle & Late 19th Century Theory & Analysis	211-310A,B	3	
20th Century Theory & Analysis	211-311A,B	3	
19th Century Analysis	211-327D	4	
20th Century Analysis	211-427D	4	
Orchestration	211-260D	4	
Orchestration	211-360D	4	28
Ear Training (Fixed Doh)	212-229A,B	2	
Ear Training (Fixed Doh)	212-231A,B	2	
Ear Training (Fixed Doh)	212-329A,B	2	
Ear Training (Fixed Doh)	212-331A,B	2	
Dictation	212-432B	2	10
20th Century Music	214-385A	3	
Orchestral Music	214-389B	3	
History Elective		3	9
ARTS & SCIENCE ELECTIVES			
Three full courses or the equivalent — at least one must be a continuation course to the 300 level.			18
			97

Special Requirements

Cumulative Grade Point Average: minimum 3.00.
First Class (A) standing in Conducting courses is required each year.

B.Mus. WITH HONOURS IN PERFORMANCE*

For prerequisite requirements for this program, see Section 3.8 (Non-Quebec Applicants)

*Honours Performance Specialization is available in: Violin, Viola, Cello, Bass, Guitar, Percussion, Flute, Oboe, Clarinet, Saxophone, Bassoon, French Horn, Trumpet, Trombone, Tuba, Piano, Organ, Harpsichord, Harp and Voice.

Course Title	*Course No.*	*Course Credits*	*Total*
PERFORMANCE			
Practical:			
Honours (4 credits per term)			24
Ensemble:			
Six ensembles, to be approved by the department			12
Twentieth Century Performance Practice	215-428A		3
Two Public Recitals (see list below)			
THEORY			
Tonal Theory & Analysis I	211-210A,B	3	
Tonal Theory & Analysis II	211-211A,B	3	
Middle & Late 19th Century Theory & Analysis	211-310A,B	3	
20th Century Theory & Analysis	211-311A,B	3	
19th Century Analysis	211-327D	4	
20th Century Analysis	211-427D	4	
			20
Ear Training (Fixed Doh)	212-229A,B	2	
Ear Training (Fixed Doh)	212-231A,B	2	
Ear Training (Fixed Doh)	212-329A,B	2	
Ear Training (Fixed Doh)	212-331A,B	2	
Solfege (Fixed Doh) — Voice Students Only	212-431A	2	8 or 10
History and Literature Electives (see list below)			6
MUSIC ELECTIVES			3
ARTS & SCIENCE ELECTIVES			
Three full courses or the equivalent — at least one must be a continuation course to the 300 level.			18
			94 or 96

Special Requirements

1. Cumulative Grade Point Average of 3.00 or better.
2. First Class (A) standing in practical subject during each semester of enrolment.

Recital Requirements

1. Keyboard and Orchestral Instruments Programs
   a) Solo Recital
   b) Chamber Music Recital
      OR
      Combined Solo and Chamber Music Recital
2. Voice Program
   a) Recital of songs for solo voice and keyboard and/or
   b) One of the following:
      i) A major role in an opera production, an oratorio or other large vocal form.
      ii) Recital of selections from opera, oratorio and other large vocal forms.
3. Length of Examination and Recital Programs

Program	**Semifinal Examination**	**Recitals**
Keyboard	45 minutes	60 minutes
Strings	45 minutes	60 minutes
Voice	40 minutes	50 minutes
Winds and Percussion	40 minutes	50 minutes

4. Recital programs must be approved by the appropriate Department of Performance Area Committee and by the Chairman of the Department.

History and Literature Electives

The following Music Literature courses must be included in the History and Literature Electives:

1.	Keyboard Programs:	214-395A and 214-396B	Keyboard Literature before 1750 Keyboard Literature after 1750
2.	Voice Program:	214-387A and 214-390A	Opera Literature Vocal Literature
3.	Orchestral Instruments Programs:	214-389B	Orchestral Literature

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LICENTIATE OF MUSIC (L.Mus.) (All instruments and Voice)

Course Title	*Course No.*	*Course Credits*	*Total*
PERFORMANCE			
Practical:			
Major (5 credits a term for 6 terms)			30
Ensemble:			
One of Choir, Orchestra or Band each year, plus 6 credits of approved ensemble electives.			min. 12
THEORY			
Melody and Counterpoint	211-110A,B	3	
Elementary Harmony	211-111A,B	3	
Tonal Theory & Analysis I	211-210A,B	3	
Tonal Theory & Analysis II	211-211A,B	3	
			12
Ear Training (Fixed Doh)	212-129A,B	2	
Ear Training (Fixed Doh)	212-131A,B	2	
Ear Training (Fixed Doh)	212-229A,B	2	
Ear Training (Fixed Doh)	212-231A,B	2	
			8
Music History Survey	214-184A	3	
Music History Survey	214-185B	3	6
			68

Special Requirements

Admission to this program requires an audition in the major field.

Continuation in the program requires that a grade of B be maintained in the major field. The candidate must take the Intermediate Examination at the end of his first year of study (Major III) and the Semifinal and Final Examinations in each of the next two years if he hopes to complete the program in the normal length of time.

N.B. Voice Students: In addition to the above courses, candidates in voice must take German Diction 242-112D and Italian Diction 242-111D (2 credits each) for a total of 72 credits.

CONCERT DIPLOMA

Course Title	*Course No.*	*Course Credits*	*Total*
PERFORMANCE			
Practical:			
Graduate Major (5 credits a term for 4 terms)		20	
Recitals (3)		3	
Concerto Performance (1)		1	
			24
Ensemble:			
4 credits of approved ensemble electives each year			8

THEORY

Mid & Late 19th Century Theory & Analysis	211-310A,B	3	
20th Century Theory & Analysis	211-311A,B	3	
			6
Ear Training (Fixed Doh)	212-332A,B	2	
Ear Training (Fixed Doh)	212-334A,B	2	
Solfege (Fixed Doh) (For singers only)	212-431A	(2)	4 (6)
Music Literature Electives			6
			48 (50)

Special Requirements

Admission is by audition only. Continuation in the program requires consistent first class standing in the major field.

Candidates in voice who have not taken the courses in German and Italian diction specified in the L.Mus. program must add them to the above requirements.

4.3 SCHOOL MUSIC PROGRAM: Keyboard/Choral; Orchestral Instruments

B.Mus. WITH A MAJOR IN SCHOOL MUSIC (Keyboard/Choral)

Keyboard Concentration

For prerequisite requirements for this program, see Section 3.8. (Non-Quebec Applicants)

Course Title	*Course No.*	*Course Credits*	*Total*
THEORY			
Theory and Analysis I	211-210A	3	
Theory and Analysis II	211-211B	3	
Late 19th Century Theory and Analysis	211-310A	3	
20th Century Theory and Analysis	211-311B	3	
Choral and Keyboard Arranging	211-462A	2	
Instrumental Arranging	211-463B	2	
			16
Ear Training (Movable Doh)	212-228A	2	
Ear Training (Movable Doh)	212-230B	2	
Ear Training (Movable Doh)	212-328A	2	
Ear Training (Movable Doh)	212-330B	2	
or	or		
Ear Training (Fixed Doh)	212-229A	2	
Ear Training (Fixed Doh)	212-231B	2	
Ear Training (Fixed Doh)	212-329A	2	
Ear Training (Fixed Doh)	212-331B	2	
History Electives			8
PERFORMANCE			6
Practical Concentration:			
Completion of Concentration Final Exam			8
Ensemble:			
Choir is required each term			6
SCHOOL MUSIC			
Vocal Techniques	221-235A or B	2	
Choir Training Skills I	221-349A	2	
Choir Training Skills II	221-350B	2	
Choir Training Skills III	221-449A	2	
Choir Training Skills IV	221-450B	2	
			10

Two of:			
Kodály Method and Workshop	221-351A or B	2	
Orff Method and Workshop	221-353A or B	2	
Suzuki Method and Workshop	223-354A, 355B	2	
Keyboard Skills I	222-353A	1	
Keyboard Skills II	222-354B	1	
Woodwind Techniques	223-202A or B	4	
Brass Techniques	223-203A or B	4	
Instrumental Survey (Strings)	223-261A or B	2	
			16
School Music Electives:			
Six credits from the following:			
Vocal Techniques	221-335A or B	2	
Kodály Method and Workshop	221-351A or B	2	
Orff Method and Workshop	221-353A or B	2	
Keyboard Skills III	222-453A	1	
Keyboard Skills IV	222-454B	1	
String Techniques (Violin/Viola)	223-201A	2	
String Techniques (Cello/Bass)	223-211B	2	
Percussion Techniques I	223-205A	1	
Percussion Techniques II	223-206B	1	
Guitar Techniques	223-250A or B	2	
Recorder Techniques	223-251A or B	2	
Orchestra and Band Techniques I	223-304A	2	
Orchestra and Band Techniques II	223-305B	2	
Suzuki Method and Workshop	223-354A, 355B	2	
Other music electives may be substituted with the written approval of the Chairman of the School Music Department.			6
ARTS & SCIENCE ELECTIVES			
Three full courses or the equivalent.			18
			94

B.Mus. WITH A MAJOR IN SCHOOL MUSIC (Keyboard/Choral)

Voice Concentration

For prerequisite requirements for this program, see Section 3.8. (Non-Quebec Applicants)

Course Title	*Course No.*	*Course Credits*	*Total*
THEORY			
Theory and Analysis I	211-210A	3	
Theory and Analysis II	211-211B	3	
Late 19th Century Theory and Analysis	211-310A	3	
20th Century Theory and Analysis	211-311B	3	
Choral and Keyboard Arranging	211-462A	2	
Instrumental Arranging	211-463B	2	
			16
Ear Training (Movable Doh)	212-228A	2	
Ear Training (Movable Doh)	212-230B	2	
Ear Training (Movable Doh)	212-328A	2	
Ear Training (Movable Doh)	212-330B	2	
or	or		
Ear Training (Fixed Doh)	212-229A	2	
Ear Training (Fixed Doh)	212-231B	2	
Ear Training (Fixed Doh)	212-329A	2	
Ear Training (Fixed Doh)	212-331B	2	
			8
History Electives			6

PERFORMANCE

Practical Concentration:			
Completion of Concentration Final Exam			8
Ensemble:			
Choir is required each term			6

SCHOOL MUSIC

Choir Training Skills I	221-349A	2	
Choir Training Skills II	221-350B	2	
Choir Training Skills III	221-449A	2	
Choir Training Skills IV	221-450B	2	
			8
Two of:			
Kodály Method and Workshop	221-351A or B	2	
Orff Method and Workshop	221-353A or B	2	
Suzuki Method and Workshop	223-354A,355B	2	
			4
Keyboard Skills I	222-353A	1	
Keyboard Skills II	222-354B	1	
Keyboard Skills III	222-453A	1	
Keyboard Skills IV	222-454B	1	
Woodwind Techniques	223-202AorB	4	
Brass Techniques	223-203AorB	4	
Instrumental Survey (Strings)	223-261AorB	2	
			14
School Music Electives:			
Six credits from the following:			
Kodály Method and Workshop	221-351A or B	2	
Orff Method and Workshop	221-353A or B	2	
String Techniques (Violin/Viola)	223-201A	2	
String Techniques (Cello/Bass)	223-211B	2	
Percussion Techniques I	223-205A	1	
Percussion Techniques II	223-206B	1	
Guitar Techniques	223-250AorB	2	
Recorder Techniques	223-251AorB	2	
Orchestra and Band Techniques I	223-304A	2	
Orchestra and Band Techniques II	223-305B	2	
Suzuki Method and Workshop	223-354A,355B	2	
Other music electives may be substituted with the written approval of the Chairman of the School Music Department.			6

ARTS & SCIENCE ELECTIVES

Three full courses or the equivalent			18
			94

B.Mus. WITH A MAJOR IN SCHOOL MUSIC (Keyboard/Choral)

Guitar Concentration

For prerequisite requirements for this program, see Section 3.8. (Non-Quebec Applicants)

Course Title	*Course No.*	*Course Credits*	*Total*
THEORY			
Theory and Analysis I	211-210A	3	
Theory and Analysis II	211-211B	3	
Late 19th Century Theory and Analysis	211-310A	3	
20th Century Theory and Analysis	211-311B	3	
Choral and Keyboard Arranging	211-462A	2	
Instrumental Arranging	211-463B	2	
			16

Ear Training (Movable Doh)	212-228A	2	
Ear Training (Movable Doh)	212-230B	2	
Ear Training (Movable Doh)	212-328A	2	
Ear Training (Movable Doh)	212-330B	2	
or	or		
Ear Training (Fixed Doh)	212-229A	2	
Ear Training (Fixed Doh)	212-231B	2	
Ear Training (Fixed Doh)	212-329A	2	
Ear Training (Fixed Doh)	212-331B	2	
			8
History Electives			6

PERFORMANCE

Practical Concentration:			
Completion of Concentration Final Exam			8
Ensemble:			
Choir is required each term			6

SCHOOL MUSIC

Vocal Techniques	221-235AorB	2	
Vocal Techniques	221-335AorB	2	
Choir Training Skills I	221-349A	2	
Choir Training Skills II	221-350B	2	
Choir Training Skills III	221-449A	2	
Choir Training Skills IV	221-450B	2	
			12
One of:			
Kodály Method and Workshop	221-351A or B	2	
Orff Method and Workshop	221-353A or B	2	
Suzuki Method and Workshop	223-354A,355B	2	
Keyboard Skills I	222-353A	1	
Keyboard Skills II	222-355B	1	
Woodwind Techniques	223-202AorB	4	
Brass Techniques	223-203AorB	4	
Instrumental Survey (Strings)	223-261AorB	2	
			14
School Music Electives:			
Six credits from the following:			
Kodály Method and Workshop	221-351A or B	2	
Orff Method and Workshop	221-353A or B	2	
Keyboard Skills III	222-453A	1	
Keyboard Skills IV	222-454B	1	
String Techniques (Violin/Viola)	223-201A	2	
String Techniques (Cello/Bass)	223-211B	2	
Percussion Techniques I	223-205A	1	
Percussion Techniques II	223-206B	1	
Recorder Techniques	223-251AorB	2	
Orchestra and Band Techniques I	223-304A	2	
Orchestra and Band Techniques II	223-305B	2	
Suzuki Method and Workshop	223-354A,355B	2	
Other music electives may be substituted with the written approval of the Chairman of the School Music Department.			6

ARTS & SCIENCE ELECTIVES

Three full courses or the equivalent.	18
	94

B.Mus. WITH A MAJOR IN SCHOOL MUSIC (Orchestral Instruments)

For prerequisite requirements for this program, see Section 3.8. (Non-Quebec Applicants)

Course Title	*Course No.*	*Course Credits*	*Total*
THEORY			
Theory and Analysis I	211-210A	3	
Theory and Analysis II	211-211B	3	
Late 19th Century Theory and Analysis	211-310A	3	
20th Century Theory and Analysis	211-311B	3	
Choral and Keyboard Arranging	211-462A	2	
Instrumental Arranging	211-463B	2	
			16
Ear Training (Movable Doh)	212-228A	2	
Ear Training (Movable Doh)	212-230B	2	
Ear Training (Movable Doh)	212-328A	2	
Ear Training (Movable Doh)	212-330B	2	
or	or		
Ear Training (Fixed Doh)	212-229A	2	
Ear Training (Fixed Doh)	212-231B	2	
Ear Training (Fixed Doh)	212-329A	2	
Ear Training (Fixed Doh)	212-331B	2	
			8
History Electives			6
PERFORMANCE			
Practical Concentration:			
Completion of Concentration Final Exam			8
Ensemble:			
Orchestra *or* Wind Ensemble is required each term.			6
SCHOOL MUSIC			
Vocal Techniques	221-235Aor B	2	
Keyboard Skills I	222-353A	1	
Keyboard Skills II	222-354B	1	
Woodwind Techniques	223-202AorB	4	
Brass Techniques	223-203AorB	4	
Percussion Techniques I	223-205A	1	
Percussion Techniques II	223-206B	1	
Instrumental Survey (Strings)	223-261AorB	2	
Orchestra and Band Techniques I	223-304A	2	
Orchestra and Band Techniques II	223-305B	2	
Orchestra and Band Techniques III	223-404A	3	
Orchestra and Band Techniques IV	223-405B	3	
			26
School Music Electives:			
Six credits from the following:			
Choir Training Skills I	221-349A	2	
Choir Training Skills II	221-350B	2	
Kodály Method and Workshop	221-351A or B	2	
Orff Method and Workshop	221-353A or B	2	
Keyboard Skills III	222-453A	1	
Keyboard Skills IV	222-454B	1	
String Techniques (Violin/Viola)	223-201A	2	
String Techniques (Cello/Bass)	223-211B	2	
Guitar Techniques	223-250AorB	2	
Recorder Techniques	223-251AorB	2	
Suzuki Method and Workshop	223-354A,355B	2	
Other music electives may be substituted with the written approval of the Chairman of the School Music Department.			6

ARTS & SCIENCE ELECTIVES

Three full courses or the equivalent. 18

94

5 COURSES AND PREREQUISITES

5.1 Theory, Counterpoint, Harmony and Analysis
5.2 Orchestration and Arranging
5.3 Ear Training
5.4 Composition
5.5 History and Literature
5.6 School Music
5.7 Jazz Studies, Conducting, and Diction
5.8 Ensembles
5.9 Practical Subjects

5.1 THEORY, COUNTERPOINT, HARMONY AND ANALYSIS (211-)

211-110A or B. MELODY AND COUNTERPOINT. (3 Credits, *Prerequisite:* McGill Preparatory Theory Secondary V OR its equivalent; 4 hours).

Professor Donald Patriquin (Co-ordinator) and Staff

211-111B. ELEMENTARY HARMONY. (3 Credits; *Prerequisite or corequisite:* 211-110A; 4 hours).

Professor Donald Patriquin (Co-ordinator) and Staff

211-170A. KEYBOARD PROFICIENCY I. (1 Credit; *Prerequisite:* none; 1 hour).
Mr. Thomas Plaunt

211-171B. KEYBOARD PROFICIENCY II. (1 Credit; *Prerequisite:* 211-170A; 1 hour).
Mr. Thomas Plaunt

211-210A or B. TONAL THEORY AND ANALYSIS I. (3 Credits; *Prerequisites:* 211-110A or B and 211-111A or B AND Ear Training (Fixed Doh) 212-129A or B and 212-131A or B, or Ear Training (Movable Doh) 212-128A and 212-130B; 3 hours).

Professor Janet Schmalfeldt (Co-ordinator) and Staff

211-211A or B. TONAL THEORY AND ANALYSIS II. (3 Credits; *Prerequisites:* 211-210A or B AND Ear Training (Fixed Doh) 212-129A or B and 212-131A or B, or Ear Training (Movable Doh) 212-128A and 212-130B; 3 hours).

Professor Janet Schmalfeldt (Co-ordinator) and Staff

211-310A or B. MIDDLE AND LATE 19th CENTURY THEORY AND ANALYSIS. (3 Credits; *Prerequisites:* 211-211[-224D] AND Ear Training (Fixed Doh) 212-129A or B and 212-131A or B, or Ear Training (Movable Doh) 212-128A and 212-130B; 3 hours).

Professor John Rea (Co-ordinator) and Staff

211-311A or B. 20th CENTURY THEORY AND ANALYSIS. (3 Credits; *Prerequisites:* 211-310A or B AND Ear Training (Fixed Doh) 212-129A or B and 212-131A or B, or Ear Training (Movable Doh) 212-128A and 212-130B; 3 hours).

Professor John Rea (Co-ordinator) and Staff

211-322D. TONAL COUNTERPOINT. (6 Credits; *Prerequisite:* 211-210A or B and 211-211A or B [211-224D], OR 213-240D; 2 hours).
Professors Kelsey Jones and Janet Schmalfeldt

211-323D. MODAL COUNTERPOINT. (6 Credits; *Prerequisite:* 211-210A or B and 211-211A or B [211-224D], OR 213-240D; 2 hours).
Professor Kelsey Jones

211-327D. 19TH CENTURY ANALYSIS. (4 Credits; *Prerequisite:* 211-210A or B and 211-211A or B [211-224D], OR 213-240D; 2 hours).
Professors Brian Cherney, Marvin Duchow and Donald Steven

211-522D. FUGUE. (6 Credits; *Prerequisite:* 211-322D; 3 hours).
Professor Kelsey Jones

211-523D. ADVANCED HARMONY. (6 Credits; *Prerequisites:* 211-322D and 211-327D, or 213-240D; 3 hours).
Professor Bruce Mather

211-427D. 20TH CENTURY ANALYSIS. (4 Credits, *Prerequisite:* 211-327D or 213-240D; 2 hours).
Professors Brian Cherney and Janet Schmalfeldt

211-529D. PROSEMINAR IN MUSIC THEORY. (6 Credits; *Prerequisite:* 211-327D; *Corequisite:* 211-427D; limited to Honours Theory students; 3 hours.)
Professor Paul Pedersen (Co-ordinator) and Staff

211-473A. SPECIAL STUDIES IN 20TH CENTURY THEORY & COMPOSITION. *Not given 1976-77.* (3 Credits; *Prerequisite:* permission of the instructor; limited enrolment.)

211-474B. SPECIAL STUDIES IN 20TH CENTURY THEORY & COMPOSITION. *Not given 1976-77.* (3 Credits; *Prerequisite:* permission of the instructor; limited enrolment.)

198-224B. PHYSICS OF MUSIC (Faculty of Science). (3 Credits; *Prerequisite:* none; 3 hours).
Professor Robert Moore

5.2 ORCHESTRATION AND ARRANGING (211-)

211-260D. INTRODUCTORY ORCHESTRATION. (4 Credits; No prerequisite; 2 hours lecture, 1 hour demonstration).
Professor Eugene Plawutsky

211-360D. ORCHESTRATION. (4 Credits; *Prerequisites:* 211-260D and 211-210 and 211-211 [-224D]; 2 hours).
Professor Alexander Brott

211-361D. COMMERCIAL ARRANGING. (4 Credits; *Prerequisite:* 213-240D and permission of the instructor; 2 hours).
Mr. Neil Chotem

211-460D. ORCHESTRATION. (4 Credits, *Prerequisites:* 211-260D and 213-240D; 2 hours).
Professor Bengt Hambraeus

211-462A. CHORAL AND KEYBOARD ARRANGING (2 Credits; *Prerequisites:* 211-310 and 211-311[-321D] AND Ear Training (Fixed Doh) 212-229A or B and 212-231A or B OR permission of the instructor; 2 hours).
Professor Donald Patriquin

211-463B. INSTRUMENTAL ARRANGING (2 Credits; *Prerequisites:* 211-462A AND Instrumental Surveys 223-261A or B, 223-262A or B, 223-263A or B, and 223-206B[-204D] OR permission of the instructor; 2 hours).
Professor Donald Patriquin

5.3 EAR TRAINING (212-)

212-129A or B. EAR TRAINING (Fixed Doh).
212-128A. EAR TRAINING (Movable Doh). (2 Credits; *Prerequisite:* McGill Preparatory Ear Training Secondary V OR its equivalent; *Pre- or Co-requisite:* Melody and Counterpoint 211-110A or B; 2 hours).

212-131A or B. EAR TRAINING (Fixed Doh).
212-130B. EAR TRAINING (Movable Doh). (2 Credits; *Prerequisites:* 212-129A or B or 212-128A AND Melody and Counterpoint 211-110A or B; *Pre- or Co-requisite:* Elementary Harmony 211-111B; 2 hours).
Professor Donald Patriquin (Co-ordinator-Fixed Doh)
Mr. Pierre Perron (Co-ordinator-Movable Doh) and Staff.

212-229A or B. EAR TRAINING (Fixed Doh).
212-228A. EAR TRAINING (Movable Doh). (2 Credits; *Prerequisites:* 212-131A or B or 212-130A AND Melody and Counterpoint 211-110A or B and Elementary Harmony 211-111A or B; 2 hours).

212-231A or B. EAR TRAINING (Fixed Doh).
212-230B. EAR TRAINING (Movable Doh). (2 Credits; *Prerequisites:* 212-229A or B or 212-228A AND Melody and Counterpoint 211-110A or B and Elementary Harmony 211-111A or B; 2 hours).
Professor Wayne Riddell (Co-ordinator-Fixed Doh)
Mr. Pierre Perron (Co-ordinator-Movable Doh) and Staff.

212-329A or B. EAR TRAINING (Fixed Doh).
212-328A. EAR TRAINING (Movable Doh). (2 Credits; *Prerequisites:* 212-231A or B or 212-230A or B AND Melody and Counterpoint 211-110A or B and Elementary Harmony 211-111A or B; 2 hours).

212-331A or B. EAR TRAINING (Fixed Doh).
212-330B. EAR TRAINING (Movable Doh). (2 Credits; *Prerequisites:* 212-329A or B or 212-328A AND Melody and Counterpoint 211-110A or B and Elementary Harmony 211-111A or B; 2 hours).
Professor Luba Zuk (Co-ordinator-Fixed Doh)
Mr. Pierre Perron (Co-ordinator-Movable Doh) and Staff.

212-431A. SOLFEGE (Fixed Doh). (2 Credits; *Prerequisite:* 212-331; 2 hours).
Mrs. Pierette Mather

212-432B. DICTATION. (2 Credits; *Prerequisite:* 212-331; 2 hours).
Mrs. Pierette Mather

5.4 COMPOSITION (213-)

213-240D. TONAL COMPOSITION. (6 Credits; *Prerequisites:* 211-110A and 111B OR their equivalent; 3 hours).
Professors Brian Cherney and John Rea

213-241A. ELECTRONIC MUSIC. (3 Credits; No prerequisites; limited enrolment; not open to major and honours students in composition; 3 hours lecture plus 3 hours group studio time).

Students in other faculties may enrol for this course with the permission of the instructor.
TBA

213-242B. ELECTRONIC MUSIC. (3 Credits; *Prerequisite:* 213-241A; limited enrolment; 3 hours lecture plus 6 hours group studio time).

Note: Students who have successfully completed 213-242B and wish to continue their studies in electronic music may register for 213-341A and 213-342B with the permission of the instructor.
TBA

213-245D. COMPOSITION. (3 Credits; *Co-requisite:* 213-240D Tonal Composition; 1 hour).
Professor Donald Steven

213-340D. COMPOSITION. (6 Credits: *Prerequisite:* 213-240D; 2 hours).
Staff

213-341A. ELECTRONIC MUSIC. (3 Credits; *Prerequisite:* 213-240D OR permission of the instructor; limited enrolment; restricted to major and honours students in composition; 1 hour lecture, 1 hour demonstration, 3 hours group studio time).
Professor Alcides Lanza

213-342B. ELECTRONIC MUSIC. (3 Credits; *Prerequisite:* 213-341A; limited enrolment; 3-hour seminar and 3 hours studio time).
Professor Bengt Hambraeus

213-440D. COMPOSITION. (6 Credits; *Prerequisite:* 213-340D; 2 hours).
Staff

213-441D. SPECIAL PROJECTS IN COMPOSITION. (6 Credits; *Prerequisite:* 213-440D; 2 hours).
Staff

5.5 HISTORY AND LITERATURE (214-, 215-)

214-184A. HISTORY SURVEY (MEDIAEVAL, RENAISSANCE, AND BAROQUE). (3 Credits; *Prerequisite or corequisite:* 211-110A and 211-111B OR permission of the instructor; 3 hours).
Professor Paul Helmer

214-185B. HISTORY SURVEY (CLASSICAL, ROMANTIC, AND 20TH CENTURY). (3 Credits; *Prerequisite or corequisite:* 214-184A OR permission of the instructor; 3 hours).
Professor Bruce Minorgan

214-184A & -185B or their equivalents are prerequisites to all 300- and 400- level history courses.

214-327A. MUSIC CULTURES OF ASIA. (3 Credits; *Prerequisite for non-Faculty of Music students:* 210-210A Introduction to Early Music or 210-211B Introduction to Music after 1750 OR permission of the instructor; 3 hours).
Professor Bang Song Song

214-328B. MUSIC CULTURES OF THE AMERICAS, AFRICA, EUROPE, AND THE PACIFIC ISLANDS. (3 Credits; *Prerequisite for non-Faculty of Music students:* 210-210A Introduction to Early Music or 210-211B Introduction to Music after 1750 OR permission of the instructor; 3 hours).

Professor Bang Song Song

214-329D. MUSIC CULTURES OF EAST ASIA. (6 Credits; *Prerequisite for non-Faculty of Music students:* 210-210A Introduction to Early Music or 210-211B Introduction to Music after 1750 or History 101-208D The Development of East Asian Civilization OR by permission of the instructor; 3 hours).

214-380B. MEDIAEVAL MUSIC. (3 Credits; Restricted to students in Music History programs; 3 hours).
Professor Paul Helmer

214-381A. RENAISSANCE MUSIC. *Not given 1976-77.* (3 Credits; 3 hours).
Professor Marvin Duchow

214-382B. BAROQUE MUSIC. (3 Credits; *Additional Pre- or corequisite:* 211-210 and 211-211 [-224D] OR 213-240D; Restricted to students in Music History programs; 3 hours).
Professor Paul Marks

214-383A. CLASSICAL MUSIC. *Not given 1976-77).* (3 Credits; *Additional Pre-or corequisite:* 211-210[-224D] and 211-211 OR 213-240D; 3 hours)
Professor Paul Marks

214-384A. ROMANTIC MUSIC. (3 Credits; *Additional Pre- or corequisite:* 211-310 and 211-311 [-321D] OR 213-340D; 3 hours).
Professor Paul Marks

214-385B. TWENTIETH CENTURY MUSIC. *Not given 1976-77.* (3 Credits; *Additional Pre- or corequisite:* 211-310[-321D] and 211-311A or B OR 213-340D; 3 hours).
Professor Brian Cherney

214-386B. CHAMBER MUSIC LITERATURE. (3 Credits; 3 hours).
Professor Paul Marks

214-387A. OPERA LITERATURE. *Not given 1976-77.* (3 Credits; 3 hours).

214-389B. ORCHESTRAL LITERATURE. (3 Credits; 3 hours).
Professor Richard Lawton

214-390B. VOCAL LITERATURE. *Not given 1976-77.* (3 Credits; 3 hours).
Professor Paul Marks

214-391A. CANADIAN MUSIC. *Not given 1976-77.* (3 Credits; 3 hours).
Professor Bruce Minorgan

214-392A. BRASS LITERATURE. *Not given 1976-77.* (3 Credits; 3 hours).

Professor Robert Gibson

214-394A. SPECIAL TOPIC SEMINAR. *Not given 1976-77.* (3 Credits; 3 hours).

214-395A. KEYBOARD LITERATURE BEFORE 1750. *Not given 1976-77.* (3 Credits; 3 hours).

214-396B. KEYBOARD LITERATURE AFTER 1750. *Not given 1976-77.* (3 Credits; 3 hours).

214-475D, 214-476D. SPECIAL PROJECT. (3,6 Credits). May be taken to replace one elective. Details will be found in the *Department of Theory Handbook.*

214-489B. HISTORY OF MUSIC THEORY.(3 Credits; *Prerequisite:* 211-210[-224D] and 211-211 OR 213-240D; 3 hours).
Professor Bruce Minorgan

214-496B. HONOURS TUTORIAL. (3 Credits). Regular individual and/or group sessions for third year (U3) honours students in history under the guidance of a faculty advisor. Independent study and musicological research problems will be stressed.
Staff

214-498D. BIBLIOGRAPHY AND METHODOLOGY IN ETHNOMUSICOLOGY. *Not given 1976-77.* (6 Credits; *Prerequisites:* History 214-327A and 214-328B, Theory 211-310[-321D], and 211-311, and Ear Training 212-329A or B, and 212-331A or B, OR permission of the instructor; 4 hours).

214-499D. PROSEMINAR IN MUSICOLOGY. (6 Credits; open only to students in the Honours in Music History program; 3 hours).
Professor Marvin Duchow

215-325D. PERFORMANCE PRACTICE OF EAST ASIAN MUSIC. (3 Credits; *Prerequisite:* permission of the instructor; limited enrolment; 2 hours).

215-382A. PERFORMANCE PRACTICE OF BAROQUE MUSIC. *Not given 1976-77.* (3 Credits; 3 hours).

215-383B. PERFORMANCE PRACTICE OF CLASSICAL MUSIC. (3 Credits; 3 hours).
Professor Paul Helmer

215-428A. TWENTIETH CENTURY PERFORMANCE PRACTICE. (3 Credits; *Pre- or corequisite:* 211-311B[-321D] AND Honours standing in Performance; 3 hours).
Professor Bruce Mather

5.6 SCHOOL MUSIC (221-,222-,223-)

Keyboard/Choral Division (221-,222-)

221-235A or B. VOCAL TECHNIQUES. (2 Credits; *Prerequisite:* none; 2 hours).
Mrs. Betty Doroschuk

221-335A or B. VOCAL TECHNIQUES. (2 Credits; *Prerequisite:* 221-235AorB; 2 hours).
Mrs. Betty Doroschuk

221-349A. CHOIR TRAINING SKILLS I. (2 Credits; *Prerequisites:* 211-211B[-224D] and 212-130 or -131; 2 hours).
Professor Wayne Riddell

221-350B. CHOIR TRAINING SKILLS II. (2 Credits; *Prerequisite:* 221-349A; 2 hours).
Professor Wayne Riddell

221-351A or B. KODALY METHOD AND WORKSHOP. (2 Credits; *Prerequisites:* 212-230 or -231 and 221-350; 2 hours).
Mr. Pierre Perron

221-353A or B. ORFF METHOD AND WORKSHOP. *Not given 1976-77.* (2 Credits; *Prerequisites:* 212-230 or -231 and 211-211B[-224D] or permission of instructor; 2 hours).

221-449A. CHOIR TRAINING SKILLS III. 2 Credits; *Prerequisite:* 221-350B; 2 hours).
Professor Wayne Riddell

221-450B. CHOIR TRAINING SKILLS IV. (2 Credits; *Prerequisite:* 221-449A; 2 hours).
Professor Wayne Riddell

222-353A. KEYBOARD SKILLS I. (1 Credit; *Prerequisites:* Keyboard Proficiency Test and 211-311B [-321D] or permission of instructor; 1 hour).
Professor Donald Mackey

222-354B. KEYBOARD SKILLS II. (1 Credit; *Prerequisite:* 222-353A; 1 hour).
Professor Donald Mackey

222-453A. KEYBOARD SKILLS III. (1 Credit; *prerequisite:* 222-354B; 1 hour).
Professor Donald Mackey

222-454B. KEYBOARD SKILLS IV. (1 Credit; *Prerequisite:* 222-453A; 1 hour).
Professor Donald Mackey

Instrumental Division (223-)

223-201A. STRING TECHNIQUES (Violin-Viola). (2 Credits; *Prerequisite:* none; 2 hours).
Professor Stephen Kondaks

223-211B. STRING TECHNIQUES (Cello-Bass). (2 Credits; *Prerequisite:* none; 2 hours).
Professor Stephen Kondaks

223-202A or B. WOODWIND TECHNIQUES. (4 Credits; *Prerequisite:* none — Open only to students majoring in School Music; 4 hours).
Professor Donald Hughes

223-203A or B. BRASS TECHNIQUES. (4 Credits; *Prerequisite:* none — Open only to students majoring in School Music; 4 hours).
Professor Robert Gibson

223-205A. PERCUSSION TECHNIQUES I. (1 Credit; *Prerequisite:* none; 1 hour).
TBA

223-206B. PERCUSSION TECHNIQUES II. (1 Credit; *Prerequisite:* 223-205A; 1 hour).
TBA

223-250A or B. GUITAR TECHNIQUES. (2 Credits; *Prerequisite:* none; 2 hours).
Mr. Ed Rusnac

223-251A or B. RECORDER TECHNIQUES. (2 Credits; *Prerequisite:* none; 2 hours).
TBA

223-261A & 223-261B. INSTRUMENTAL SURVEY (Strings.) (2 Credits; *Prerequisite;* none–Open only to students majoring in School Music; 2 hours).
Professor Stephen Kondaks

223-262A & 223-262B. INSTRUMENTAL SURVEY (Woodwinds.) *Not given 1976-77.* (2 Credits; *Prerequisite:* none; 2 hours).

223-263A & 223-263B. INSTRUMENTAL SURVEY (Brass.) *Not given 1976-77.* (2 Credits; *Prerequisite:* None; 2 hours).

223-304A. ORCHESTRA AND BAND TECHNIQUES I. (2 Credits; *Prerequisite:* ONE of 223-261A or B, 223-202A or B, 223-203A or B; 2 hours).
Professors Donald Hughes and Stephen Kondaks

223-305B. ORCHESTRA AND BAND TECHNIQUES II. (2 Credits; *Prerequisite:* 223-304A; 2 hours).
Professors Donald Hughes and Stephen Kondaks

223-354A. SUZUKI METHOD AND WORKSHOP. (1 Credit; *Prerequisites;* 212-230 or -231, 211-211B[-224D] or permission of instructor; 1 hour).
Dr. Alfred Garson

223-355B. SUZUKI METHOD AND WORKSHOP. (1 Credit; *Prerequisite:* 223-354A; 1 hour).
Dr Alfred Garson

223-404A. ORCHESTRA AND BAND TECHNIQUES III. (3 Credits; *Prerequisite:* 223-305B; 4 hours).
Professor Donald Hughes

223-405B. ORCHESTRA AND BAND TECHNIQUES IV. (3 Credits; *Prerequisite:* 223-404A; 4 hours).
Professor Donald Hughes

5.7 JAZZ STUDIES, CONDUCTING AND DICTION (240-, 241-, 242-)

240-213A. JAZZ IMPROVISATION I. (3 Credits; *Prerequisite:* Permission of the instructor; 3 hours.)
Mr. Armas Maiste

240-214B. JAZZ IMPROVISATION II. (3 Credits; *Prerequisite:* 240-213A; 3 hours.)
Mr. Armas Maiste

240-313A. JAZZ IMPROVISATION III. (3 Credits; *Prerequisite:* 240-214B and permission of the instructor; 3 hours.)
Mr. Armas Maiste

240-314B. JAZZ IMPROVISATION IV. (3 Credits; *Prerequisite:* 240-313A; 3 hours.)
Mr. Armas Maiste

240-413A. JAZZ IMPROVISATION V. (3 Credits; *Prerequisite:* 240-314B and permission of the instructor; 3 hours.)
Mr. Armas Maiste

240-414B. JAZZ IMPROVISATION VI. (3 Credits; *Prerequisite:* 240-413A; 3 hours.)
Mr. Armas Maiste

241-136D. CONDUCTING. (2 Credits; 1 hour).
Professor Alexander Brott

241-236D. CONDUCTING. (4 Credits; *Prerequisite:* 241-136 with a grade of "A"; 1 hour).
Professor Alexander Brott

241-336D. CONDUCTING. (6 Credits; *Prerequisites:* 223-206[-204]; 223-261; 223-262; 223-263; 211-211[-224]; 241-236 with a grade of "A"; 1 hour).
Professor Alexander Brott

241-436D. CONDUCTING. (8 Credits; *Prerequisites:* 211-311[-321]; 211-327; 241-336 with a grade of "A". 1 hour).
Professor Alexander Brott

242-111D. ITALIAN DICTION. (2 Credits; 1 hour).
Professor Luciano Della Pergola

242-112D. GERMAN DICTION. (2 Credits; 1 hour).
T.B.A.

5.8 ENSEMBLES

243-978A & 978B. WIND ENSEMBLE. (1 - 1 Credit; *Prerequisite:* Audition; 6 hours).
Professor Robert Gibson

243-979A & 979B. SONG INTERPRETATION. (1 - 1 Credit; *Prerequisite:* Audition; 2 hours).
Professor Jan Simons and Mr. Thomas Plaunt

243-980A & 980B. BAROQUE ENSEMBLE. (1 - 1 Credit; *Prerequisite:* Audition; 2 hours).
TBA

243-981A & 981B. PIANO ENSEMBLE. (1 - 1 Credit; *Prerequisite:* Concentration Piano Intermediate Examination or equivalent; 1 hour).
Professors Elizabeth Dawson, Dorothy Morton, Charles Reiner and Luba Zuk

243-982A & 982B. ACCOMPANYING CLASS I. (1 - 1 Credit; *Prerequisite:* Concentration Piano Final Examination or equivalent: 1 hour).
Professor Charles Reiner

243-983A & 983B. ACCOMPANYING CLASS II. (1 - 1 Credit; *Prerequisite:* 243-982A & B; 1 hour).
Professor Charles Reiner

243-984A & 984B. STUDIO ACCOMPANYING. (1 - 1 Credit; *Prerequisite:* Permission of instructor). Qualified students may be assigned to studio accompanying for four hours a week in lieu of participation in Choir. Their work will be appraised and marked by the studio teacher.
Professor Rose Goldblatt and Staff

243-985A & 985B. MIXED ENSEMBLES. (1 - 1 Credit; *Prerequisite:* Audition; 1-2 hours.)
Professor Luba Zuk and Staff

243-986A & 986B. OPERA COACHING. *Not given 1976-77.* (1 - 1 Credit; *Prerequisite:* Piano Audition; 3 hours).

243-987A & 987B. CONTEMPORARY CHAMBER MUSIC CHOIR. *Not given 1976-77.* (1 - 1 Credit; *Prerequisite:* Audition; 2-3 hours).

243-989A & 989B. WOODWIND ENSEMBLES. (1 - 1 Credit; 2-3 hours).
Professors Donald Hughes, Gerald Danovitch and Staff

243-990A & 990B. BAND. (1 - 1 Credit; *Prerequisite:* Audition; 4 hours).
Professor Richard Lawton

243-991A & 991B. BRASS ENSEMBLES. (1 - 1 Credit; 2-3 hours).
Professor Richard Lawton and Staff

243-992A & 992B. CONCERT CHOIR. (1 - 1 Credit; *Prerequisite:* Audition; 2-4 hours).
Professor Wayne Riddell

243-993A & 993B. FACULTY CHOIR. (1 - 1 Credit; 2-4 hours).
Professor Wayne Riddell, Mrs. Betty Doroschuk

243-994A & 994B. CONTEMPORARY MUSIC ENSEMBLE. (1 - 1 Credit; *Prerequisite:* Audition; 2-4 hours).
Professor Eugene Plawutsky

243-995A & 995B. JAZZ ENSEMBLE. (1 - 1 Credit; *Prerequisite:* Audition; 3 hours).
Professor Gerald Danovitch

243-996A & 996B. OPERA STUDIO. (2 - 2 Credits; *Prerequisite:* Audition; 3-6 hours).
Professors L. Della Pergola, Edith Della Pergola and Staff

243-997A & 997B. ORCHESTRA. (1 - 1 Credit; *Prerequisite:* Audition; 6 hours).
TBA

243-998A & 998B. PERCUSSION ENSEMBLES. (1 - 1 Credit; 2-3 hours).
Professor Pierre Beluse

243-999A & 999B. STRING ENSEMBLES. (1 - 1 Credit; 2-3 hours).
Professors Stephen Kondaks and Mauricio Fuks

5.9 PRACTICAL SUBJECTS

TEACHING STAFF

Piano:

Mr. Norair Artinian
Prof. Elizabeth Dawson
Prof. Rose Goldblatt
Mrs. Mary Kirby
Prof. Paul Loyonnet
Mrs. Esther Master
Prof. Kenneth Meek
Prof. Dorothy Morton
Miss Penelope Peters
Mr. Tom Plaunt
Prof. Charles Reiner
Mr. Karl Steiner
Mrs. Ljerka Wollmarker
Mr. Kenneth Woodman
Prof. Luba Zuk

Organ:

Prof. John Grew
Prof. Donald Mackey
Prof. Kenneth Meek

Harpsichord:

Prof. John Grew

Voice:

Miss Kathleen Anderson
Prof. Edith Della Pergola
Prof. Luciano Della Pergola
Mrs. Betty Doroschuk
Mrs. Carmen Mehta
Mme. Dina Maria Narici
Mr. Winston Purdy
Prof. Jan Simons

Strings:

Mr. Antonin Bartos, *guitar*
Prof. Edward Culbreath, *cello.* (On sabbatic leave, 1976-1977)
Prof. Gisela Depkat, *cello*
Mr. Stephen Fentok, *guitar*
Prof. Mauricio Fuks, *violin*
Mrs. Mildred Goodman, *violin*
Mrs. Sonja Jelinkova, *violin*
Prof. Steven Kondaks, *violin and viola*
Mr. Thomas Lederer, *bass*
Mr. Michael Strutt, *guitar*

Woodwinds:

Miss Jeanne Baxtresser, *flute*
Mr. Peter Bowman, *oboe*
Prof. Gerald Danovitch, *saxophone and clarinet*
Prof. Donald Hughes, *saxophone*
Mr. Emilio Iacurto, *clarinet*
Mr. Abe Kestenberg, *saxophone, clarinet and flute*
Mr. Sidney Rosenberg, *bassoon*
Miss Cindy Shuter, *flute*

Brass:

Prof. Robert Gibson, *trumpet*
Mr. Ted Griffith, *trombone*

Mr. Thomas Kenny, *french horn*
Prof. Richard Lawton, *trombone*
Mr. James Ranti, *trumpet*
Mr. Ellis Wean, *tuba*

Percussion:

Prof. Pierre Béluse

Harp:

Mme. Marie-Christine Dyke-Gabillet

PRACTICAL ASSIGNMENTS AND LESSONS

The assignment of students to teachers for private lessons is the responsibility of the Chairman of the Department of Performance and is made on the basis of student request and actual registration. It is understood that returning students will study with the same teacher unless prior arrangements have been made with the Chairman of the Department in consultation with the teachers concerned. Teacher assignments will be made soon after the period of enrolment and posted on the notice boards during the first week of classes. Following this assignment, it is the responsibility of the student to contact his teacher and arrange lesson times.

Individual lessons missed as a consequence of the instructor's absence will be made up at the mutual convenience of the instructor and student. Lessons missed as the result of the student's absence will be made up only if notice of cancellation has been given 48 hours in advance, or if a doctor's certificate is produced and prior notice of the cancellation is given.

ASSIGNMENT OF PRACTICE ROOMS

Practice hours will be assigned on a weekly basis at the beginning of each term. Students are expected to practise a minimum of 4 hours a week for each credit of practical work undertaken in a term, and will be assigned this amount of time in Faculty of Music practice rooms. Students wishing to be available at the Building Director's Office (E221). Practice time is assigned on an hourly basis, and the room is reserved until 10 minutes past the hour. If at that time the student assigned to the room is not present, the room is available to anyone.

CREDIT WEIGHTS FOR PRACTICAL STUDY

Elective, Concentration	2 credits each term
Major (B.Mus.)	4 credits each term
Major (L.Mus.);	5 credits each term
Graduate Major	5 credits each term

COURSE NUMBERING (PRACTICAL SUBJECTS)

A six-digit course number is used to define the area and function of individual practical instruction offered by the Faculty of Music. The first three digits indicate the instrument, *i.e.:*

220: Harp
224: Violin
225: Viola
226: Cello
227: Bass
228: Guitar
229: Percussion
230: Flute
231: Oboe
232: Clarinet
233: Saxophone
234: Bassoon
235: French Horn
236: Trumpet
237: Trombone
238: Harp
239: Tuba
250: Piano
251: Organ
252: Harpsichord
253: Voice

The fourth digit indicates the level of study:

Practical Major	**Practical Concentration**
1: (Qualifying)	(Qualifying & Intermediate)
2: (Intermediate)	(Final)
3: (Semifinal)	
4: (Final)	
6: (Postgraduate study	

The fifth digit indicates the function of the particular subject in the student's curriculum, *i.e.:*

1: Elective
3: Concentration
4: Major (B.Mus.)
5: Major (L.Mus., Concert Diploma)
6: Honours

The final digit indicates examinations and/or recitals, *i.e.:*

0: No examination
2: Intermediate examination
3: Final examination (Concentration)
4: Semifinal examination (Major)
5: Final examination (Major)
6: Undergraduate recital
7: Postgraduate recital
8: Elective examination
9: Concerto examination

The letter suffix to each course number indicates the term and duration of instruction (A-first term; B-second term; C-summer session; D-first and second terms.)

Thus, the number 225-130A would provide the following information about the instrument, level, function, and examination level of a student's practical study:

225- : viola
225-1 : intermediate
225-13 : concentration
225-130 : no examination
225-130A : first-term instruction

The number 250-354B would provide the following information:

250- : piano
250-3 : semifinal
250-35 : major (L.Mus.)
250-354 : semifinal examination
250-354B : second-term study (and examination)

EXAMINATIONS AND GOALS IN PRACTICAL SUBJECTS

Different levels of achievement are required of students depending upon the program of study in which they are registered. These levels are defined in part by the difficulty of material and length of program required at the various examinations (see Performance Department *Handbook),* and in part by the examiners' assessment of how well the student plays this material. In general there are four categories of practical study:

Elective Study:

Work for students electing a practical subject beyond or in addition to their curricular requirements is planned by the instructor and student to satisfy the student's individual needs and aims. The student is not expected to follow a specific program and does not normally sit an examination.

Concentration Study:

A student majoring in Composition, Conducting, Music History, School Music or Theory is obliged to present two examinations in order to fulfill the practical requirement of these programs. These are: the Concentration Intermediate Exam, normally taken after one year of post CEGEP study; and the Concentration Final Exam, taken some time later. (For details see: Performance Department *Handbook)*

Major and Honours Study:

A student majoring in performance (B.Mus. or L.Mus.) must show talent for this field before being admitted to the program. The practical requirement for these programs comprises three examinations: Major Intermediate Exam, Major Semi-Final Exam, and Major Final Exam; which are fully described in the Performance Department *Handbook.* Following the final examination the jury may recommend that the student be permitted to give a public recital.

Any U1 performance major may indicate an intention to pursue an Honours program but admission becomes final only in the U2 year after the results of the Major Intermediate Exam are available. Students taking Honours in performance must achieve first class (A) standing on this examination and in each subsequent term. Following the Major Intermediate Exam, Honours students must present the Honours Semi-Final Exam and give two public recitals as outlined in the Performance Department *Handbook.*

Post-Graduate Study:

Concert Diploma candidates must present a number of public recitals as well as fulfill the various special performance requirements (concertos, chamber music, orchestral passages, etc.) specified by instrument in the Performance Department *Handbook.* First class (A) standing in all practical requirements is mandatory for continuation in the program.

M.M.A. candidates should consult the announcement of the Faculty of Graduate Studies and Research for the requirements of their program.

Mandatory Examinations:

The following chart lists the examination requirements of each program: Additional information concerning these examinations can be found on pages to of this announcement and in the Performance Department *Handbook.*

Program of Study	Instrumental or Vocal Stream	Examination	Course No. Ends In:
Bachelor of Music Major or Honours in Composition Major or Honours in Music History Honours in Theory Major in Orchestral Conducting Major in School Music	CONCENTRATION (eg. Piano Concentration)	INTERMEDIATE (eg. Piano Concentration Intermediate Examination)	— 132A/B
		FINAL (eg. Piano Concentration Final Examination	— 233A/B
Bachelor of Music Major in Performance **Licentiate in Music***	MAJOR (eg. Oboe Major)	INTERMEDIATE (eg. Oboe Major Intermediate Examination)	— 242A/B — 252A/B *
		SEMI-FINAL (eg. Oboe Major Semi-Final Examination)	— 344A/B — 354A/B *
		FINAL (eg. Oboe Major Final Exam)	— 445A/B — 455A/B *
Bachelor of Music Honours in Performance	HONOURS (eg. Violin Honours)	SEMI-FINAL (eg. Violin Honours Semi-Final Examination)	— 364A/B
		RECITAL I	— 366A/B
		RECITAL II	— 466A/B
Concert Diploma (For exact recital and concerto requirements by instrument, consult the Performance Dept. *Handbook*)	POSTGRADUATE (diploma)	RECITAL I	— 657A/B
		RECITAL II	— 657A/B
		CONCERTO I	— 659A/B
		CONCERTO II etc.	— 659A/B
Master of Musical Arts (M.M.A.)	POSTGRADUATE (degree)	RECITAL I	219-660D or 219-662D or 219-665D
		RECITAL II	219-661D or 219-666D

Other Examinations:

It is the teacher's prerogative to request a committee examination of any of his students during any term if he feels that this is in the student's best interest. Such an examination is recorded as an elective exam and is marked on the basis that it represents a level mid-way between the student's most recent mandatory exam and the succeeding one. The teacher's grade on the term work is prepared in advance and counts as 50% of the final mark.

GENERAL DESCRIPTION OF PRACTICAL EXAMINATIONS

A general description of each examination including composition of the juries and distribution of marks is given below. For complete details of the requirements for individual instruments, consult the Performance Department *Handbook*.

1. –232A/B: Concentration Intermediate Examination

Purpose: To assess the student's progress in the practical area and make recommendations for further study. The panel may recommend to the Department in which the student is registered: a) that he be asked to withdraw from the program; b) that he be placed on probationary standing until the examination is repeated satisfactorily; c) that, as he has made sufficient progress, he may proceed to the Concentration Final examination. When appropriate, a recommendation may be made to the Department of Performance that the student be admitted to either the B.Mus. (Major in Performance) or L.Mus. programs.

Panel: The Area Chairman or his delegate, the student's teacher and one other staff member from the area comprise the examining panel. The Chairman of the Department in which the student is registered or his delegate, is invited to attend the examination in order to discuss with the panel their recommendation.

Distribution of Marks: The teacher submits a mark for the term's work as well as a mark for the examination. The teacher's combined mark and the marks for the examination submitted by the others on the panel each count as one-third of the final mark.

2. –333A/B: Concentration Final Examination

Purpose: To determine that the student is a sufficiently accomplished vocal or instrumental practitioner to qualify for the degree Bachelor of Music.

Panel: The panel consists of the Area Chairman or his delegate plus two other staff members of the area concerned.

Distribution of Marks: Each member of the panel submits a mark for the examination. The final mark is the average of these.

3. –242A/B or –252A/B: Major Intermediate Examination (B.Mus. or L.Mus.)

Purpose: To assess the student's progress in the practical area and determine whether or not he may continue in the program. The panel may recommend to the Department that: a) the student be asked to withdraw from the program; b) the student be placed on probationary standing until the examination is repeated satisfactorily; c) the student be permitted to continue to the Major Semi-final examination; d) the student be admitted to the Performance Honours program.

Panel: The Department Chairman or his delegate, the student's teacher, plus two other staff members from the area constitute the examination panel.

Distribution of Marks: The teacher submits a mark reflecting both his evaluation of the examination and the student's work during the term. The others on the panel each submit a mark for the examination and the final mark is the average of all these.

4. –344A/B or –354A/B: Major Semi-Final Examination (B.Mus. or L.Mus.)

Purpose: To assess the student's ability to perform a program of sufficient length and suitable repertoire as specified in the requirements for each instrument, described in the Department of Performance *Handbook*.

Panel: The panel consists of the Area Chairman or his delegate plus two other representatives of the area concerned.

Distribution of Marks: Each member of the panel submits a mark for the examination and the final mark is the average of all these.

5. –445A/B or –455A/B: Major Final Examination (B.Mus. or L.Mus.)

Purpose: To determine that the student is a sufficiently accomplished vocal or instrumental performer to qualify for the Licentiate of Music or the degree Bachelor of Music with a Major in Performance. The examination will assess the student's ability to perform a complete recital program as well as any other requirements which may be specified for individual instruments. The length of the program as well as the type of material to be presented is listed by instrument in the Department of Performance *Handbook*.The panel may recommend that the student be permitted to present a public recital.

Panel: The Department Chairman or his delegate, the Area Chairman, plus two other representatives of the area concerned constitute the examining panel.

Distribution of Marks: As for the Major Semi-final examination.

6. –364A/B: Honours Semi-Final Examination

Purpose: To determine that the student is capable of outstanding undergraduate work and therefore eligible to continue in the Honours program. Upon successful completion of this examination the student may make the necessary arrangements for presenting the solo recital (see Recital II below) required in the program.

Panel: The panel consists of the Department Chairman or his delegate, the Area Chairman, plus one other staff member from the area concerned.

Distribution of Marks: As for the Major Semi-final examination.

7. –464A/B: Honours Recital I
–465A/B: Honours Recital II

Purpose: The Honours recitals are performances before an audience as well as a jury and are intended to demonstrate competence in both solo and ensemble contexts. They are the sole means by which the student may demonstrate the outstanding performance ability required for the B.Mus. degree with Honours in Performance. Successful completion of these recitals with the mark of "A" is required for postgraduate M.M.A. study in Performance.

Program	Honours in a Kybd. or Orchestral Instrument	Honours in Voice
Recital I: * (–464A/B)	Either: A Chamber Music Recital or: A combined solo and Chamber Music Recital	Either: a major role in an opera production, oratorio or other large-scale vocal form. Or: a recital of selections from the above.
Recital II: (–465A/B)	A solo recital	A recital of songs for solo voice and keyboard and/or solo voice and chamber ensemble.

*This recital may be undertaken at any time following the Major Intermediate Examination which resulted in the student being admitted to the Honours program.

Panel: The jury for these recitals consists of the Department Chairman or his delegate as well as three staff members from the area concerned.

Distribution of Marks: As for the Major Semi-final examination.

8. Postgraduate Recitals

Purpose: Recitals in the M.M.A. and Concert Diploma programs are intended to demonstrate that the student is qualified to engage in professional performance activities, and has attained the high level of performing ability required for the M.M.A. degree or the Concert Diploma.

Panel: For the Concert Diploma recitals the panel consists of the Department Chairman or his delegate as well as two staff members from the area concerned. In the M.M.A., the Chamber Music Recital (219-661D) and Voice Recital II (219-666D) are evaluated by two internal examiners appointed by the Graduate Committee of the Faculty of Music; recitals 219-660D, 219-662D and 219-665D are judged by one external and two internal examiners appointed by this Committee.

Distribution of Marks: Each examiner judges the recital independently and submits his evaluation without consulting the other examiners. All of the examiners must judge the recital to be satisfactory for the candidate to pass.

APPLICATIONS FOR EXAMINATIONS

Annual examinations are not mandatory so long as the student continues, in his teacher's opinion, to work well and improve at a suitable rate. By applying for a given examination the student signifies that he is prepared to play and be judged accordingly. Permission to withdraw from or postpone a practical examination will normally be granted only in the case of illness. A medical certificate must be submitted to the Departmental Secretary within seven days after the withdrawal request has been received. Withdrawal from a practical examination on other than medical grounds must be authorized by the Department Chairman.

Application for the above examinations must be made on the appropriate form available in the Performance Departmental Office. The applicant must obtain his teacher's approval on this form and submit it according to the following schedule:

Examination Period	*Application Deadline*
Sept. 17 - Oct. 1, 1976	August 6
December 13-17, 1976	November 5
April 25 - May 6, 1977	March 11
September 26 – 30, 1977	August 12

APPLICATIONS RECEIVED AFTER THESE DEADLINES WILL BE AUTOMATICALLY DEFERRED TO THE NEXT EXAMINATION PERIOD.

The student is responsible for applying and must submit with the application three typewritten copies of his or her program, signed by the teacher, for the approval of the Area Committee. N.B. Piano students must submit their proposed program to the Chairman of the Piano Area Committee directly, one month prior to the above application deadlines.

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Faculty of
RELIGIOUS STUDIES

1976 — 1977

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CALENDAR FOR SESSION 1976 — 1977

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August 10, Tuesday to August 19, Thursday	Supplemental examinations
September 8, Wednesday to September 10, Friday	Registration: M.A. and Ph.D. candidates — Islamics Institute
September 10, Friday	Registration: B.Th. all years (9 a.m. to 5 p.m., Currie Gymnasium)
September 9, Thursday	Registration: S.T.M. and M.A. candidates (9 a.m. to 2 p.m. W. and H. Birks Building)
September 10, Friday	Registration: Doctoral candidates (9 a.m. to 2 p.m., W. and H. Birks Building)
September 13, Monday	ALL CLASSES BEGIN
September 16, Thursday	Assembly At Noon
September 27, Monday to October 1, Friday	Last day for changes in Fall term and sessional courses
October 5, Tuesday and October 6, Wednesday	Alumni Reunion and the Birks Lectures (to be confirmed)
October11, Monday	Thanksgiving Holiday
November 9, Tuesday	Fall Convocation
December 10, Friday	Last day of classes
December 13, Monday to December 23, Thursday	Study Period or Class Tests

1977

January 4, Tuesday to January 14, Friday	Examinations in Fall term courses (if required)
January 14, Friday January 17, Monday	Registration new students Winter Term begins
February 1, Tuesday	Last day for applying for Graduate Fellowships
February 11, Friday and February 12, Saturday	Mid-Term holiday
April 8, Friday to April 11, Monday	Easter
April 15, Friday	Last day of classes
April 18, Monday to May 6, Friday	Examinations in Winter term courses (if required)
June 7, Tuesday to June 8, Wednesday	Convocations

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ALBERT A. KUDSI-ZADEH, B.A., M.A., Ph.D.(Indiana)
Associate Professor of Arab History

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Assistant Professor of Indian History and Urdu

VISITING PROFESSOR

G. MACGREGOR, D.ésL., D.D., D.Phil., F.R.S.L.
Philosophy of Religion

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2 GENERAL INFORMATION

The Faculty of Religious Studies is located in the handsome building (erected in 1930) known as the William and Henry Birks Building, formerly Divinity Hall, at 3520 University Street, Montreal, Que., H3A 2A7 (Telephone 514-392-4828). Besides the usual classrooms, offices, and common rooms, this building contains the University Chapel in the Collegiate style.

The Library of the Faculty contains more than 56.000 volumes together with about 240 current periodical subscriptions. The main Library in the Birks Building includes the collections of the United Theological College and the Montreal Diocesan Theological College, and holdings for the nearby Presbyterian College Library are recorded in the Library's catalogue. In addition, students have access to all the resources of the McGill University Libraries System.

The Institute of Islamic Studies was founded in 1952. It is presently located in the Leacock Building (8th and 9th floors).

The Faculty was known as the Faculty of Divinity until 1970. It has an interesting history that goes back to the pioneering ecumenical days of 1912 when four Theological Colleges in Montreal, the Congregational, Montreal Diocesan Theological College, Wesleyan Methodist, and Presbyterian, formed a Joint Board for academic study, leaving each denominational College to provide its own professional training for various types of Christian ministry. All these Colleges had become affiliated with McGill in the nineteenth century and it was natural that negotiations should lead to the creation in 1948 of a Faculty of Divinity that assumed the academic functions of the Joint Board.

The original Faculty of Divinity not only taught theological courses for ordinands; it also engaged in teaching undergraduates in other faculties, a small selection of courses of more general interest — philosophy and psychology of religion, history of western thought. This has grown over the years into the present Honours and Major programs in Religious Studies, within the Faculty of Arts. Such a program, like the change in name itself from Divinity to Religious Studies, reflects the new emphasis on "the academic study of religion" in higher education. Although this represents a method of examining the data of religion distinct from classical theology, it is the presence of both approaches within one Faculty which provides the intellectual environment necessary for the integrity of each. Thus the stream of B.Th. and S.T.M. complements that of B.A., M.A. and Ph.D. to create an interdisciplinary dialogue.

The B.Th. is a first professional degree, but it does not in itself qualify the recipient for employment in religious institutions. It is expected that the three associated Theological Colleges — Montreal Diocesan Theological College of the Anglican Church of Canada, the Presbyterian Church, Montreal, the United Theological College of The United Church of Canada, all located in close proximity to the University campus — will direct their ordination candidates to proceed by way of an accredited B.A. or equivalent to either the B.Th. or the S.T.M. After graduation they complete their Church requirements through the "professional year" supervised by the Montreal Institute for Ministry. This Institute represents the combined resources of the three affiliated colleges and maintains positive relationship to the Faculty of Religious Studies as part of the larger community of theological scholarship.

The affiliated Colleges underwrite the cost of tuition for their properly registered candidates for ministry. Information about Church requirements and the professional year should be sought from the College Principals.

Both Colleges and Faculty urge prospective theological students to complete a B.A. with honours or a major in religious studies (i.e. over 50% of the course work), with a view to entering the S.T.M. program if possible. (See Section 4, HONOURS AND MAJOR PROGRAMS IN RELIGIOUS STUDIES below).

It should be noted that one biblical language, usually Greek, is required by some of the Churches. Ministerial students are encouraged to qualify in Greek *before* entering this Faculty; but arrangements will be made to assist those who have been unable to do so.

Specific information about degree programs in the Institute of Islamic Studies will be found in Section 6 below and in the *Announcement of the Faculty of Graduate Studies and Research.*

Advanced Standing

Entrants who have a B.A. or equivalent degree may be admitted to B.Th. 2.

Applicants who have an accredited B.D. or M.Div. with good second class standing, in addition to a recognized B.A., may complete the S.T.M. in one year or may enter the M.A. program.

Application and Registration

a) Intending candidates for the B.Th. should submit to the Dean an application with supporting documents as early as possible and not later than August 1, 1976. Supporting documents are: official transcripts of previous academic work, and two letters of reference.

b) Registration for the B.Th. will take place on September 10, 1976. Those who register later will be required to pay a special fee unless exempted by the Registrar.

c) For the S.T.M., M.A. and Ph.D. degrees applications must be made with the necessary transcripts and letters of reference to the *Dean of Religious Studies* in order that appropriate recommendations may be made to the Faculty of Graduate Studies and Research which ultimately controls all advanced degree programs. Applications for the M.A. and Ph.D. programs in Islamic Studies should be sent to the Director of the Institute.

d) The sessional *inscription* of returning graduate students and new admissions to graduate study is conducted by mail. Forms and fee sheets are sent out in May and June each year and these should be returned to the Dean of Religious Studies by the date indicated.

Candidates for Master's degrees must register on September 9 and Ph.D. candidates similarly on September 10. Candidates who have received permission to be non-resident may attend in person to pay the fee or may send it by mail.

Classes of Students

FULL-TIME

Students who are admitted to the B.Th. program and who are taking not less than 12 credits per term.

PART-TIME

Students in a degree program who are not full-time, i.e. students taking fewer than 12 credits per term if in satisfactory standing, or fewer than 10 credits if in probationary standing.

VISITING

A visiting student is one who is taking courses at McGill for credit at another university.

SPECIAL

Students not registered as proceeding to a degree but who receive the permission of the Dean and Faculty to undertake certain regular credit courses.

GRADUATE

Students of this Faculty who are enrolled in the Faculty of Graduate Studies and Research as candidates for the degrees of S.T.M., M.A. and Ph.D.

Academic Credit Transfer Agreement

See *General Announcement.*

Fees

In the B.Th. Program tuition fees are $19.00 per credit (hence $570.00 for the normal full load of 30 credits per session). There is also a fee of $60.00 for Student Services and $25.00 for the Students' Society. Ministerial candidates, however, do not pay tuition fees.

Graduate Studies:	Tuition	Student Services	Students' Societies
1st year Master's	$570.00	$60.00	$29.50
2nd year Master's	$285.00	30.00	29.50
Beyond 2nd year Master's	40.00	30.00	29.50
1st to 3rd year Doctorate	570.00	60.00	29.50
Beyond 3rd year Doctorate	40.00	30.00	29.50

PART TIME, SPECIAL AND VISITING STUDENTS

$19.00 per credit will be assessed and in addition, the following fees will be assessed per term:

a) If taking 9 credits and over:
Student Services..... $30.00
Students' Societies $14.00
(average fee, actual varies by Faculty)

b) If taking 5 but less than 9 credits:	
Student Services	$15.00*
Students' Societies	$ 5.00
c) If taking less than 5 credits:	
Student Services	$ 7.50*
Students' Societies	$ 5.00

SPECIAL FEES AND PENALTIES

**Application for Admission	$15.00
Late registration	25.00
Late payment fee (after specified date):	
1st 30 days	10.00
After 30 days	25.00
***Graduation Fee	10.00
Duplicate Student Identity Card	5.00
Duplicate diploma	10.00
Certified transcript of student's record:	
First two copies each	1.00
Additional copies made at the same time, each	.25
Re-reading examination paper	10.00
Supplemental examinations, each paper	10.00

***Excludes Athletics: At the discretion of the Director of Athletics, a student may participate in the Athletics program upon payment of an additional $30.00.**

****Students already at McGill who are making application to a professional faculty or to the Faculty of Graduate Studies and Research are not required to pay this fee.**

*****Graduation fee: Applications by students who expect to graduate at the Spring Convocation must be filed by March 1st of each year and by those who expect to graduate at the Fall Convocation by August 1st of each year. An application form will be mailed to each eligible student and must be returned to the Registrar's Office together with the graduation fee of $10.00 by the appropriate date listed above. This fee will cover all expenses in connection with graduation including academic dress. It is the student's responsibility to ensure that his or her name is included in the graduation list by notifying the Dean's office that he or she expects to graduate.**

Regulations for Payment of Fees

NEW STUDENTS

Students entering the University for the first time and those returning in Graduate Studies are required to pay their fees for the term in which they are registered either by mail or in person at the Accounting Office within 10 days after registration. For students registering in September the second instalment is due before January 15, 1977.

RETURNING STUDENTS

Returning students from the previous year (except in Graduate Studies) must pay one half of the total required fee by mail or in person to the Accounting Office before August 23, 1976, otherwise they will not be permitted to register. Instructions for paying fees in advance will be mailed to all returning students, either with their Sessional Reports of Standing or a short time later. Students who have been notified by the University of the award of a scholarship, bursary or student loan, and who require this award for payment of the first instalment of fees, must obtain permission to delay payment of fees from the Student Aid Office.

The second instalment is due by January 15, 1977. A late payment fee as stated above is charged for payment after this date.

LATE REGISTRATION

Students registering late must pay their fees at the time of registration .

As soon as possible after the prescribed dates for the payment of fees the Chief Accountant will send to the Registrar's Office a list of the registered students who have not paid their fees. Reports of standing, transcripts of record and diplomas will be withheld until such time as the fees are paid or a satisfactory arrangement is made with the Chief Accountant.

Regulations Concerning Withdrawal

A student who wishes to withdraw from the University or from certain courses (whether or not he wishes to apply for remission of fees) must secure the permission of the Dean or Associate Dean of his Faculty. The Office of the Associate Dean will supply the necessary form which must be completed and submitted. Students withdrawing from all their courses must attach their Student Identity Card to the withdrawal form. A student considering withdrawal is strongly advised to consult his Dean or Associate Dean before making a final decision.

Tuition fees for the term in which the student withdraws are refundable as shown below and apply to *individual course* withdrawal as well as to *complete* withdrawal from the University.

Student Services and Students' Societies fees are not refundable after October 15 for the Fall term and after February 18 for the Winter term.

Fall Term

Up to October 15 (less minimum charge of $50 in the case of complete withdrawal)	100%
October 16-31	50%
November 1-19	25%
After November 19	No refund

Winter Term

Up to February 18	100%
(less minimum charge of $50 in the case of complete withdrawal)	
February 19-28	50%
March 1-18	25%
After March 18	No refund

A student wishing to apply for a refund of fees must consult with the Registrar's Office.

Examinations

The pass mark in B.Th. courses is 55% for "satisfactory" standing (see below "Regulations for the B.Th. degree"); S.T.M. and M.A. courses 65% and in Ph.D. courses 70%. First class standing in the doctoral program, the S.T.M. and the M.A. is 80% and over; in the B.Th. standing is expressed by a Grade Points Average (see **grading** below).

THE CREDIT SYSTEM

CREDIT REQUIREMENTS

a) All full courses in Religious Studies have a value of 6 credits.

b) A total of 90 credits must be accumulated in order to qualify for the B.Th. degree. The normal course load in any academic session is five full courses — 30 credits.

c) Not more than 45 credits may be allowed for courses taken before coming to McGill, or in study undertaken or subjects passed in an unorthodox but approved manner.

Grading

a) Competence in a course may be determined by examinations and/or essays, or by other means chosen by the instructor and approved by the Dean.

b) The following grades are used:

A — 80%	— 100%	= 4 points
B — 65%	— 79%	= 3 points
C — 55%	— 64%	= 2 points
D — 45%	— 54%	= 1 point
F — 0%	— 44%	= 0 points

c) Grades A, B and C are satisfactory passes. D is a conditional pass; F is a failure.

d) A Grade Point Average (GPA) is obtained by multiplying the grade points by the credit weight and dividing the total of these products by the total credits attempted.

A Cumulative Grade Point Average (CGPA) is compiled, using all the student's B.Th. work to date.

Standing

a) There are three categories of standing:
Satisfactory: a GPA of 2.0 or better.
Probationary: a GPA between 1.5 and 1.9.
Unsatisfactory: a GPA below 1.5.

b) A student with a *high* GPA (at least 3.2) may take more than the normal five full courses and is encouraged to do so.

c) A student in *probationary* standing will be allowed to take no more than four full courses during the academic session, and must raise his CGPA to *satisfactory* before resuming a normal course load.

d) A student with *unsatisfactory* standing will have to withdraw, or seek readmission as a probationary student with special permission from the B.Th. Committee and the Dean.

e) The overall record (CGPA) must be *satisfactory* before a student can be recommended for the degree.

f) Normally a student must accumulate the required 90 credits within a period of *five years* from the date of entrance into the B.Th. program.

g) Qualification for the award of the degree shall include satisfactory standing (a grade of C or better) in all required courses, and the accumulation of sufficient acceptable credits through elective courses to make a total of 90 credits.

h) The B.Th. degree may be awarded *With Honours* if a student has accumulated 96 credits (i.e. one additional full course with a grade of B or better) and if his CGPA is 3.2 or better.

NOTE: It is understood that students from the associated Theological Colleges have to fulfil certain Church requirements. Their choice of electives is to be made in consultation with the Principal of their College, but the University expects such students to give full time study to their academic courses for the B.Th. Professional and vocational courses (e.g. leading to ordination) are expected to follow the completion of the B.Th. degree.

3 SCHOLARSHIPS, FELLOWSHIPS AND AWARDS

Full information concerning undergraduate and graduate awards is contained in the *Undergraduate Scholarships, Bursaries, Prizes, Medals, and Loan Funds Announcement* and the *Postgraduate Awards, Fellowships and Bursaries Announcement* which may be obtained from the Registrar's Office.

4 PROGRAMS AND COURSES OF INSTRUCTION

The Honours and Major Programs In Religious Studies

(available as part of the McGill B.A. Curriculum)

For general information on courses and Honours and Major programs, consult the Adviser, Professor Stevenson, Room 108, phone 392-4835. For specific course information consult the instructor.

Honours and Major students must consult the Adviser prior to registration each year.

HONOURS IN RELIGIOUS STUDIES

The Honours program in Religious Studies offers a degree of analysis and concentration beyond that of the Major program, through course work, intensive research and discussion with peer groups.

There are no prerequisites for entry to the program which will normally be at the beginning of the first year. Students must maintain a CGPA of 2.8; or 3.5 for First Class Honours. The program consists of a minimum of 66 credits chosen as follows:

1) At least 48 credits from the Religious Studies courses described below. (Honours students may also choose from the B.Th. program in this calendar, and certain courses in the Jewish Studies Program, after consultation with the Adviser. In special cases, permission may be given for admission to graduate seminars in the Faculty of Religious Studies.) Among these the following are required: 201A and 202B, 252A and 253B in U1; the Honours Colloquium (6 credits) in U3; one course (6 credits) in a religious tradition other than the student's own in U2 or U3.
2) Up to 18 credits from approved Related Courses (see below).

JOINT HONOURS PROGRAMS

Please consult the Adviser for information about possible joint Honours programs.

MAJOR IN RELIGIOUS STUDIES

A Major in Religious Studies consists of 54 credits as follows:

1) At least 36 credits are to be chosen from the Religious Studies courses described below. (Major Students may choose their courses from the list below; but also from the B.Th. program in this announcement, and certain courses in the Jewish Studies Program, after consultation with the Adviser.) Students must choose at least one full course (6 credits) in a tradition other than their own.
2) Up to 18 credits to be chosen from approved Related Courses (see below).

INTERDISCIPLINARY MAJOR programs may be arranged in consultation with the Adviser. Joint programs are in operation between Religious Studies and Classics, Philosophy and Art History.

Course Descriptions

260-201A RELIGIOUS TRADITIONS OF THE ANCIENT NEAR EAST. (3 credits) The religions of ancient Egypt, Mesopotamia and Canaan; a brief consideration of religion in general, its origin, nature and study; a consideration of the geographical, historical and cultural conditions which influenced religious expression; myth and ritual.
D.R. Runnalls

260-202B. RELIGIOUS TRADITIONS OF THE ANCIENT NEAR EAST. (3 credits) The religion of ancient Israel in the setting of the Ancient Near East; from Abraham to Ezra, continuity and discontinuity with Egypt, Mesopotamia, and Canaan.
D.R. Runnalls

260-252A. HISTORY OF RELIGIONS. (3 credits) An introduction to the subject, a consideration of primitive religions, a survey of the main elements of Hinduism and Buddhism in India.
K. Young

260-253B. HISTORY OF RELIGIONS. (3 credits) An introduction to the tradition of the Far East: the Confucianist, Taoist, and Buddhist traditions of China and the Shinto and Buddhist traditions of Japan.
K. Young

260-280D. NEW TESTAMENT GREEK. (6 credits) See B.Th. program.
J.C. Kirby and Staff

260-300A. POST-BIBLICAL JEWISH TRADITION. (3 credits) The origins of Rabbinic Judaism: a survey of Jewish history and thought from Ezra to the Tannaim; oral tradition; Torah interpretation in the Mishnah and Midrashim.
D.R. Runnalls

260-301B. POST-BIBLICAL JEWISH TRADITION. (3 credits; prerequisite; 260-300A or the consent of the lecturer.) The religion and literature of sectarian groupings: apocalyptic thought; wisdom; Dead Sea Scrolls; Josephus.
D.R. Runnalls

260-310D. THE NEW TESTAMENT: ITS MAKING AND MEANING. (6 credits) The beginnings of the Christian Movement: the mission and achievement of Jesus. Early Christian Missions and the growth of institutions. Religion 260-201A and 260-202B are desirable but not mandatory previous courses. Critical approaches studied through modules (about one quarter of the course work).
J.C. Kirby

260-320D. A HISTORY OF CHRISTIAN THOUGHT. (6 credits) A survey of the development of Christian thought from the post-apostolic period to the present day, in relation to the concurrent cultural and philosophical movements. The work of prominent Christian thinkers, ancient, medieval and modern, will receive special attention.
D.J. Hall

260-322A. THE ANCIENT CATHOLIC CHURCH (TO A.D. 325). (3 credits) This course covers the growth of the Christian tradition in the period from the reign of Nero to the Council of Nicaea A.D. 325. Special attention is paid to the setting within Roman Imperial History. Lectures are given on the outstanding teachers of the Christian faith.
G. Johnston

260-323B. THE ANCIENT CATHOLIC CHURCH (A.D.325-604). (3 credits) This course is a continuation of 322A and covers the period from A.D.325 to 604. Special attention is paid to the development of Christian theology, the Eastern Byzantine Church and the significance of the Papacy.
G. Johnston

260-335A. THEOLOGICAL ANTHROPOLOGY. (3 credits) From within the Christian tradition this course deals with the relationship between a person's anthropological world-view and his/her theological perspective. This includes: 1. Consideration of the God-human relationship in three world-views operative in North America today: 2. Some of the theological implications involved in a shift in these world-views.
E.K. Malloy-Hanley

260-338A PERSPECTIVES ON WOMEN IN THE CHRISTIAN TRADITION. (3 credits) A theological and historical study of the perspectives on women operative in the early, medieval and contemporary periods of the Christian tradition. The course considers each of these perspectives in relation to the underlying world-views and will be an opportunity to discuss some of the theological consequences each of these perspectives has had on Christian tradition in general and some Christian women in particular. (N.B.) The course is designed for any students interested in a theological consideration of some of the Christian roots to the questions and issues of the liberation of women in North America.
E.K. Malloy-Hanley

260-339B. IMAGES OF THE FEMININE — Mythic, Philosophic, and Human — in the Hindu and Buddhist Traditions. (3 credits) The richness (and ambivalence) of feminine imagery can be approached from three perspectives: *mythic* (a study of the portrayal of goddesses and epic figures: Parvati, Sita, Durga, etc.); *philosophic* (a study of material nature, the power to create, wisdom, and compassion) and *human* (a study of mothers, wives, daughters, temptresses, and nuns). The interrelationship of the supreme reality and feminine imagery, the supreme knowledge and its accessibility for women, and the religious paths and their availability for women will be analyzed. (Note: This course is designed for students of Hinduism and Buddhism to acquaint them with the influence of the Tantric tradition on the various Hindu and Buddhist philosophies and for students interested in women and religion).
K. Young

***260-340B. RELIGION AND THE SCIENCES.** (alternates with 345A) (3 credits)
G. MacGregor

260-341A. INTRODUCTION TO PHILOSOPHY OF RELIGION. (3 credits) See B.Th. program.
J.C. McLelland.

260-345A. RELIGION AND THE ARTS. (3 credits) Myths and symbols approached through literary criticism to examine art forms as self-images, social critique and forms of ultimate concern: concentration on Western culture.
J.C. McLelland

260-346B MYTH AND SYMBOL IN THE VISUAL ARTS OF HINDUISM AND BUDDHISM. (3 credits) Art as the expression of religious myths, symbols, and concepts and a focus of religious behaviour. Themes such as the Hindu concept of deity will be explored through slides of Visnu, Siva, and the Goddess and will be related to interpretations of iconography, the symbolisms inherent in temple architecture, and religious acts such as rituals, meditation, and visions. The Buddha's life, samsara as man's predicament, and nirvana as man's goal will be discussed and illustrated through the arts of India, Java, China, and Japan (May be taken for graduate credit with additional readings in the historical periods of Hindu and Buddhist art; graduate course should be listed as 260-687B).
K. Young

260-351A. PHENOMENOLOGY OF RELIGION (3 credits) A cross cultural comparison of a religious theme (to vary each year). 1976-77: The Sacred City and the Wilderness. A study of the apprehension of landscape through religious symbols. The beloved places of Vaisnavism, the homeland of the Buddha, Mecca, Jerusalem, and Quebec will be focuses of study in this examination of a common motif: journey to the sacred center.
K. Young

260-361A. RELIGIOUS BEHAVIOUR. (3 credits) See B.Th. program.
M. Peaston

260-371B. THE HUMAN CONDITION. (3 credits) A critical examination of representative theories about man, his situation and his values in the light of traditional interpretations of Christian anthropology and ethics, together with an attempt to formulate some contemporary clues in response to man's search for meaning. No prerequisites; but Biology

177-013A and 014B — "Collaborative Studies in Science and Human Affairs" — would be an excellent preparatory course.
J.A. Boorman

260-380D. ADVANCED NEW TESTAMENT GREEK. (6 credits) See B.Th. program
J.C. Kirby

260-390D ELEMENTARY BIBLICAL HEBREW. (6 credits) See B.Th. program.
D.R. Runnalls

260-404B. POST-EXILIC BIBLICAL LITERATURE. (3 credits) See B.Th. program.
D.R. Runnalls

260-408A. THE PROPHETS. (3 credits) See B.Th. program. Prerequisite 201A and 202B or equivalent.
R.C. Culley

260-450D. THE ISLAMIC TRADITION. (6 credits) The Islamic Community and the elements of its tradition — scripture, prophet, doctrine, practices, institutions — considered historically and in terms of religious meaning.
C.J. Adams

260-451D. THE HINDU TRADITION. (6 credits) An introduction to the Hindu religious tradition, its history, faith and practice.
R.W. Stevenson

260-454B. MODERN HINDU THOUGHT. (3 credits) A study of the developments in religious thought with special reference to Ram Mohan Roy, Dayananda Saraswati, Ramakrishna, Vivekananda, Gandhi, Tilak, Aurobindo, and Radhakrishnan. (Prerequisite 260-451D or permission).
R.W. Stevenson

***260-455D. BUDDHISM.** (to be given 1977-78) (6 credits) The history and teachings of Theravada and Mahayana Buddhism in India. The expansion of Theravada Buddhism through South East Asia with special focus on Sri Lanka. The expansion of Mahayana Buddhism with special focus on Japan.
K. Young

260-456A BUDDHISM: Independent Research and Tutorial. (3 credits) Permission for the course to be granted by the instructor.
K. Young

260-490D. ADVANCED BIBLICAL HEBREW. Advanced course in the language. (6 credits)
R.C. Culley

260-496A. SPECIAL STUDIES. (3 credits) Topics to be arranged
Staff

260-497B. READING AND RESEARCH FOR MAJOR STUDENTS. (3 credits)
Staff

260-498B. RESEARCH SEMINAR. (3 credits)
Staff

260-499A. TOPICS TO BE ARRANGED FOR MAJOR STUDENTS. (3 credits)
Staff

397-110D. ELEMENTARY ARABIC. (6 credits)
Staff

397-220D. INTERMEDIATE ARABIC. (6 credits)
Staff

397-300D. ADVANCED ARABIC. (6 credits)
Staff

**Not given in 1976-77*

LANGUAGES

Arabic is taught by the staff of the Institute of Islamic Studies and students taking it must fulfil the requirements of the Institute.

Students taking other introductory language courses in Religious Studies programs are strongly advised to take the advanced course also.

Instruction in the languages of some other religious traditions (such as Ancient Egyptian and Sanskrit) may be available in any given year. Ask the Adviser for further information.

Related Courses

For the selection of Related Courses, the Faculty Adviser should be consulted. Related Courses are chosen from the Faculty of Education, the Faculty of Music, and the following Departments in the Faculty of Arts:

Anthropology	History
Art History	Italian
Classics	Jewish Studies
English	Philosophy
French Canada Studies	Sociology
Political Science	German

Courses from other Faculties or Departments may also be considered appropriate by the Adviser, depending upon their content, and the student's interests and qualifications.

Students taking Related Courses must fulfil any requirements laid down by the Faculty or Department concerned (permission from the Dean or instructor, prerequisites, grades, etc.)

REGULATIONS FOR THE B.TH. DEGREE

ADMISSION

Admission to the B.Th. is granted to any qualified person, whatever his religious affiliation, who wishes to pursue studies in religion and theology at the first degree level. In the Province of Quebec the B.Th. fulfils the requirements for a "first professional degree".

Candidates shall normally be required to give satisfactory evidence of one of the following before their enrolment for this degree:

a) The Diploma of Collegial Studies (D.C.S.) of a Quebec CEGEP. This should normally include a course of Introduction to World Religions, and may also include other courses in the study of religion;

b) Equivalent standing to CEGEP from another Canadian province or from a country with a different system of post-secondary education. This may include at least one successful year of study in a recognized University or College (e.g. first year Arts in a four year pass Arts degree); in some cases additional credits in Arts may be required from students not educated in Quebec;

c) A bachelor's degree in Arts or Science or Engineering or Commerce or Education or Music or the like, whether it contains courses in religion or theology, or not. Those who hold such a degree will in most cases be admitted directly to B.Th.2.

d) The *minimum* requirement for admission to B.Th.2 is one full year of post-CEGEP studies in Arts, but acceptance of applicants with these minimal qualifications is at the discretion of the Faculty.

THE PROGRAM

The course extends over three academic sessions for those admitted under (a) and (b) above, and two academic sessions for those admitted under (c).

The normal load consists of five half courses (15 credits) each term. Some courses are "required", others are "elective". Students who have already done equivalent work, or who are not ordination candidates, may be permitted to take electives in either this or some other Faculty in lieu of "required" courses.

Course selections should be discussed with the Chairman of the B.Th. Committee prior to registration.

B.Th. Courses 1976 — 77

B.Th.1

Candidates who are not concentrating on Christian Theology will arrange to take five courses in consultation with the Chairman of the B.Th. Committee. These may be chiefly in the Faculty of Arts and in the Religious Studies programs (see above).

Ministerial students and others majoring in the Christian tradition should take 252A and 253B History of Religion; and electives chosen with the approval of College Principals and the B.Th. committee.

260-252A. HISTORY OF RELIGIONS. (3 credits) An introduction to the subject, a consideration of primitive religions, a survey of the main elements of Hinduism and Buddism in India

260-253B. HISTORY OF RELIGIONS. (3 credits) An introduction to the tradition of the Far East: the Confucianist, Taoist and Buddhist traditions of China and the Shinto and Buddhist traditions of Japan.
K. Young

B.Th.2.

The following courses are required of ministerial ordination candidates:

260-303D. OLD TESTAMENT STUDIES. (6 credits) Reading and interpreting representative selections from the Old Testament in English translation. Some attention to approaches developed by historical-critical scholarship and to background information such as history, geography, and archaeology, mainly through modules (one quarter of course work).
R.C. Culley

260-310D. THE NEW TESTAMENT: ITS MAKING AND MEANING. (6 credits) The beginnings of the Christian Movement: the mission and achievement of Jesus. Early Christian Missions and the growth of institutions. Religion 260-201A and 260-202B are desirable but not mandatory previous courses. Critical approaches studied through modules (about one quarter of the course work).
J.C. Kirby

260-324D. THE CHURCH IN HISTORY. (6 credits) A survey of the main developments in the history of Christianity from the end of the apostolic age to the present. Use will be made of selected readings from primary and secondary sources.
H.K. Markell

260-333B. PRINCIPLES OF CHRISTIAN THEOLOGY I. (3 credits) An introduction to the central categories of Christian theology. The course will include discussion of the nature of theology, and of all the primary areas of doctrine (Theology, Christology, Pneumatology, Anthropology, Ecclesiology, Eschatology). Throughout, a conscious attempt will be made to reflect on the Christian faith in the light of the contemporary apologetic situation.
D.J. Hall

260-341A INTRODUCTION TO PHILOSOPHY OF RELIGION. (3 credits) For those lacking a comparable undergraduate course. Surveys the basic themes of the subject, including theistic arguments, values and destiny, the problem of evil, religious language.
J.C. McLelland

Other candidates will arrange their course load in consultation with the Chairman of the B.Th. Committee.

B.Th.3

Ordination candidates take the following required courses:

260-434A. PRINCIPLES OF CHRISTIAN THEOLOGY II. (3 credits) This course is a continuation of 260-333B.
D.J. Hall

260-453B. INTRODUCTION TO WORLD RELIGIONS. (3 credits) A study of elements of the major religious traditions and a consideration of some problems of the Christian approach to other traditions.
R.W. Stevenson

260-471A. THEOLOGICAL ETHICS. (3 credits) A study of the biblical and theological foundations of Christian ethics, and the nature, application and relevance of the Christian norm.
J.A. Boorman

The remaining seven half courses are electives. Candidates not majoring in Christian theology will plan courses in consultation with the Chairman of the B.Th. Committee.

ELECTIVE COURSES FOR B.Th.2 AND B.Th.3

260-280D. ELEMENTARY NEW TESTAMENT GREEK. (6 credits) An introduction to the grammar and syntax of New Testament Greek.
J.C. Kirby and Staff

260-321B. HISTORY OF CHRISTIAN LITURGY. (3 credits) A survey of the history of Christian Worship, with special reference to the Classical, Reformation, and Modern Periods.
J.C. Kirby

260-330A. REFORMED THEOLOGY. (3 credits) A study of Luther, Zwingli, Bucer, Calvin and other Reformed theologians, with particular reference to the historical development of their teaching.
D.N. MacMillan

***260-331A. CONTEMPORARY CATHOLIC THEOLOGY.** (3 credits) An introduction to contemporary Christian thought from within a Catholic perspective. This study will include an examination of recent reinterpretations of the traditional understanding of God and man in relation to the world of today.
E.K. Malloy — Hanley

***260-360A. SEXUALITY AND HUMAN VALUES.** (3 credits) A study designed to provide accurate information about human sexuality and to deepen our understanding of it. Changing sex roles and behaviour patterns are considered together with current attitudes, standards and values. Students are encouraged to develop a framework for decision making in sexual matters. Teachers from other departments will participate.
Limited registration
M. Peaston and Staff

260-361A. RELIGIOUS BEHAVIOUR. (3 credits) A study of some significant aspects of religious life (e.g. worship, mysticism, prayer) and some contemporary religious phenomena (e.g. the charismatic movement). Religious growth and the religious personality are also considered.
M. Peaston

260-380D. ADVANCED NEW TESTAMENT GREEK. (6 credits) Advanced course in the language, with reading of selected biblical texts.
J.C. Kirby

260-390D. ELEMENTARY BIBLICAL HEBREW. (6 credits) An introduction to the grammar and syntax of biblical Hebrew. Emphasis is placed on both the oral and the written language.
D.R. Runnalls

260-404B. POST-EXILIC BIBLICAL LITERATURE. (3 credits) A study of a major book of the post-exilic biblical literature within the context of the religious development of the period 520-160 B.C.
D.R. Runnalls

***260-405A. THE THEOLOGY OF THE OLD TESTAMENT.** (3 credits) A study of Old Testament theology based on selected writings.
R.C. Culley

***260-407A. THE WRITINGS.** (3 credits) A study of a major book from the Writings of the Old Testament such as Psalms, Job, or Proverbs in English translation.
R.C. Culley

260-408A. THE PROPHETS. (3 credits) A study of a major prophet in the context of the prophetic tradition in the Old Testament. Isaiah 40-66.
R.C. Culley

260-410A. MAJOR MOTIFS IN NEW TESTAMENT THEOLOGY. (3 credits) Attention is focused on Jesus' theology (e.g. in his parables), on Paul and John and the author of Hebrews. Unity and diversity of New Testament teaching, the images used, and other special topics are also discussed (in seminars).
G. Johnston

260-420B. CANADIAN CHURCH HISTORY. (3 credits) A survey of the major Christian traditions in Canada from the settlement of New France to the present. Lectures and seminars with use, where possible, of primary source materials.
H.K. Markell

260-431B. CHURCH, MINISTRY and SACRAMENTS. (3 credits) A study of what Christians have believed, do believe and, by implication, ought to believe, concerning these fundamental themes of the Christian faith.
D.N. MacMillan

260-441B. TWENTIETH CENTURY PHILOSOPHY OF RELIGION. (3 credits) An advanced course illustrating "philosophical options and theological choices" — positivism, existentialism, empirical and process thinking, history and hope.
J.C. McLelland

260-461B. HUMAN DEVELOPMENT AND GENDER IDENTITY. (3 credits) An outline of personality development and functioning from birth onwards with special reference to the major stages of the life cycle.
M. Peaston

260-470B. CHRISTIAN SOCIAL ETHICS. (3 credits) This course examines the basis of Christian social responsibility, traditional patterns of association between Church and State, and forms of Christian involvement in political and social action. Attention is focused on possible strategies for dealing with selected contemporary social issues.
J.A. Boorman

260-490D. ADVANCED BIBLICAL HEBREW. (6 credits) Rapid reading of prose selections. Class hours devoted to discussion of grammar based on readings from biblical Hebrew.
R.C. Culley

260-491A. HEBREW TEXTS. (3 credits) Translation and exegesis of selected texts.
R.C. Culley

260-492B. HEBREW TEXTS. (3 credits) Translation and exegesis of selected texts.
R.C. Culley

*** Not given in 1976-77.**

OTHER RELATED COURSES

By permission of the Faculty and the instructors concerned, students may substitute other courses for any of those required if they have already taken these or similar courses for credit.

Electives may also be chosen from the Arts curriculum or other departments of the university (see "Related Courses" B.A. program.)

By permission of the Dean, students may also enrol for elective courses in other Montreal universities (but not more than twelve credits per session may be taken outside McGill).

5 GRADUATE STUDIES

Program Information

The Faculty of Graduate Studies and Research, located in Dawson Hall, directs and controls all programs leading to higher degrees and recommends candidates to the Senate for these degrees. As a Department within it, the Faculty of Religious Studies offers courses leading to the degrees of Master of Sacred Theology (S.T.M.), Master of Arts (M.A.) and Doctor of Philosophy (Ph.D.).

Faculty Regulations

NOTE: It is important that intending students should consult the annual *Announcement of the Faculty of Graduate Studies and Research* for information about the various programs available and about the general regulations that apply to all Departments within the Faculty, including the various deadlines indicated in the *Calendar of Dates* for 1976-77.

Advanced Degree Requirements

Candidates for advanced degrees should note that they are expected to give full time if possible to their research and courses (unless specially exempted or granted non-resident status).

Language Examinations are usually offered each year early in October and in mid-April. Candidates should advise the Dean's office well in advance of their intention to write.

Theses. The regulations concerning format, dates of submission, and other technical matters may be consulted in the office of the Dean of Religious Studies or in the office of Mrs. F. Mitchell, Graduate Studies, Dawson Hall.

Regulations For The M.A. [Religious Studies]

PURPOSE

The purpose of this degree is to encourage advanced study and research in religious studies and theology, especially for those who wish to become scholars or teachers and those who are already engaged in some field of religious service.

ADMISSION

Candidates must possess a B.A. or equivalent degree (e.g. B.Th., M.Div.), with at least good second class standing in a major or honours program in religious studies or theology from a University or College that is accredited in North America.

In certain cases candidates may be advised to take a Qualifying Year before entering the M.A. program.

RESIDENCE

The basic residence requirement is two years, but the degree may, by permission, be taken on a part-time basis. See "Thesis Submission" below.

THE PROGRAM

Candidates are required to complete satisfactorily six half-courses and write a thesis embodying the results of their research. A reading knowledge of French or another modern language is also required.

AREAS OF STUDY

Research may be undertaken in the following areas:

(1) *Biblical* (including Old Testament and New Testament)
(2) *Christian Theology* (including Church History, Christian Theology, Pastoral Psychology and Theological Ethics)

(3) *Religion and Culture* (including Religion and the Arts, Theological Ethics, and Philosophy of Religion)
(4) *Comparative Study* (including Hinduism, Islam, and Judaism as well as Christianity)

Candidates who have studied only one major religious tradition before entering the M.A. program must take at least two half-courses in Comparative Study or in the study of a second major faith. Related courses in other McGill departments are also available, e.g. in Anthropology, Art History, East Asian Studies, Islamic Studies, Music and Sociology. Other resources exist in the several universities of Montreal.

LANGUAGE EXAMINATIONS

The modern language examination is to be taken at the end of the first term by those admitted in September, and at the end of the second term by those admitted in January. Exemption from this requirement is granted to those who have a degree pass in the language.

THESIS SUBMISSION

The dissertation may be submitted at the beginning of the second year of residence, or within four years after all residence requirements have been met.

NOTE: A thesis in Old Testament requires competence in Hebrew; similarly, one in New Testament requires competence in Greek.

Regulations For The S.T.M.

PURPOSE

The S.T.M. is meant primarily for those who intend to enter the ministry of the Christian Church or another religious institution, or proceed to teaching in schools or to some form of social work.

NOTE: Professional training is available to S.T.M. graduates in the three affiliated Theological Colleges (Anglican, Presbyterian, and United). McGill also has a Faculty of Education and a School of Social Work.

ADMISSION

Candidates must possess a B.A. with at least second class standing in a major or honours program in religious studies or theology from an accredited university or college. Those who have a McGill B.Th. or an equivalent degree, with good second class standing, may be admitted to the second year of the S.T.M. program.

RESIDENCE

The normal requirement is *two years* (of two terms each) of full-time study, but the degree may, by permission, be taken on a part-time basis.

THE PROGRAM

Candidates are expected to be enrolled for full-time study and are required to complete satisfactorily sixteen half-courses within two years, eight in each academic year. They may, by permission, take summer session courses for credit, or take additional courses if their academic standing warrants it. A reading knowledge of French or German, or another modern language, is also required.

AREAS OF STUDY

Courses are offered by the department in the four areas listed in the M.A. regulations.

Related courses are also available in other departments.

SPECIAL REQUIREMENTS

Ministerial candidates are to choose their courses in consultation with the Principal of the Theological College to which they belong.

During the two sessions, two half-courses are to be selected by all candidates from each of the areas listed in "Areas of Study." In each of the four terms they will be required to follow a Reading Course. The Area Committees direct these courses, one course for each area over the four terms. Thus a limited amount of specialization is possible.

Those who are admitted into S.T.M.2 shall elect courses in consultation with the chairman of the Graduate Committee of the department. They too may be permitted to specialize in one area.

LANGUAGE EXAMINATION

Entrants to S.T.M.1 are expected to pass the modern language requirements by the end of their *second* term; but those who are admitted into S.T.M.2 must do so by the end of their *first* term. Exemption is granted to those who have a degree pass, or the equivalent, in the language.

NOTE: To specialize in Old Testament a candidate may be required to show competence in Hebrew; similarly, in New Testament he may require competence in Greek.

Regulations For The Ph.D. In Religious Studies

PURPOSE

The purpose of the Ph.D. program is to engage the student in academic studies at the highest level and to enable him if he so wishes to prepare himself for an academic career. It normally requires three years of research beyond the bachelor's degree, and two beyond the master's.

ADMISSION

Candidates shall normally possess an accredited M.A. in Religion or Theology, or the S.T.M., with at least *high second class standing* and recommenda-

tion for doctoral study; or such other degree as the Faculty may accept as equivalent to the McGill M.A. or S.T.M.

RESEARCH AREAS

The Faculty is prepared to guide students in thesis research in each of the following subjects: Old Testament, New Testament, Church History, Christian Theology, Theological Ethics, Philosophy of Religion, Psychology of Religion, and Comparative Study.

RESIDENCE

A Ph.D. Candidate must reside normally for *two consecutive sessions* of full-time study and research. Part-time study may be permitted in some cases. One session, but in no case the last required session, may be spent at another institution with the approval of the Dean and the Faculty of Graduate Studies and Research.

Candidates admitted to Ph.D.1 take six half-courses; those admitted to Ph.D.2, on the basis of a master's degree and adequate preparation, usually take four half-courses.

SUPERVISION

The Graduate Committee shall appoint for every candidate who is admitted to Ph.D.1 an adviser, and for every candidate admitted to Ph.D.2 a supervising committee of three members, the chairman of which shall be the director of his research and thesis. It shall be the duty of the adviser or the director to meet with the candidate as soon as possible after his first registration to discuss his program with him and advise him concerning the requirements he is obliged to meet (e.g. courses, modern languages, ancient languages, field and general examinations). The director shall be responsible for arranging meetings of the supervising committee with the candidate as required. A thesis project must be approved by the Graduate Committee of the Faculty not later than December 1 of the Ph.D.2 year.

LANGUAGE REQUIREMENTS

French and German are normally required of all candidates, and formal admission into the work of Ph.D.2 will not be granted until at least one of these languages has been passed (or exemption granted). Similarly, formal admission into Ph.D.3 requires a pass in the second modern language. (It is strongly recommended that one or both of these languages be included in the bachelor's or master's work preceding doctoral study.)

If necessary, candidates may also have to pass examinations in Hebrew, Greek, Sanskrit and other ancient tongues, and consequently a *qualifying year may be advised.*

COMPREHENSIVE EXAMINATIONS

A candidate who wishes to undertake research in one of the subjects listed in "Research Areas" must pass a FIELD examination in it before entrance into the second year of residence.

In addition, before admission to Ph.D.2 or at the beginning of this year for those exempted from Ph.D.1, candidates must show general competence in *three subjects cognate to his own field.* (Competence here means at the level of second class standing in the McGill M.A.)

The manner in which this requirement is to be met shall be determined by the candidate's adviser or supervising committee. If the candidate's previous record warrants it, the waiving of this requirement shall be recommended by his supervising committee to the Graduate Committee of the Faculty.

DOCTORAL COLLOQUIUM

As one of their requirements all Ph.D.1 and Ph.D.2 students shall attend the graduate colloquium, where they can share ideas and criticisms with one another and their professors.

THESIS SUBMISSION

The thesis may be submitted at the end of the second term of the second session of residence by candidates admitted with a master's degree. It must be submitted within five years after all residence requirements have been completed, unless special permission has been granted for an extension. A thesis which has been judged unsatisfactory by one of the examiners is normally not acceptable and precludes an oral defence. But any thesis judged to be unsatisfactory may be re-submitted once, one year after first submission, if this is approved by the Executive Committee of the Faculty of Graduate Studies and Research.

The thesis is examined by External and Internal Examiners. If their reports warrant it, the candidate shall conduct an oral defence of his thesis before a committee of six appointed by the Dean of Graduate Studies on the recommendation of the department. Its chairman is the Dean or his Pro-Dean, and one member must represent a department of the University other than Religious Studies.

The final grade awarded to a successful Ph.D. candidate depends not only on the quality of the dissertation but on course work, examinations, research and teaching ability, and also the oral defence.

GRADUATE COURSES

Those marked * will *not* be offered in 1976-77. All are half courses unless otherwise noted: *A* denotes Fall term, *B* Winter term, *C* a Summer Session course, *D* a full course given in two terms. A course may not be offered if fewer than six students enrol.

AREA A (BIBLICAL)

***260-602A. JEREMIAH TO MALACHI:** THE DECLINE OF PROPHECY.
S.B. Frost

***260-604B THE ROOTS OF EARLY JUDAISM.**
D.R. Runnalls.

260-605B. INTERPRETERS OF THE RELIGION AND FAITH OF ANCIENT ISRAEL. (Isaiah 40-66).
R.C. Culley

***260-607A. STUDIES IN THE BIBLICAL NARRATIVE TRADITIONS.**
R.C. Culley

260-608A. STUDIES IN THE PSALMS. Survey of the historical development of Hebrew-Jewish religion.
S.B. Frost

***260-610A. RECENT INTERPRETATIONS OF MARK.**
J.C. Kirby

260-612A. THE PASSION NARRATIVE IN THE FOUR GOSPELS. A comparative study of the crucifixion narratives in the four canonical gospels, together with a consideration of the theology that underlies each of them.
J.C. Kirby

260-613B. NEW TESTAMENT ETHICS. A study, mainly exegetical, of passages in the New Testament that illuminate the moral teaching of Jesus, St. Paul, and the later Apostolic Church.
G. Johnston

***260-614B. THE GOSPEL OF JOHN.**
G. Johnston

***260-615B. THE HOLY SPIRIT IN THE NEW TESTAMENT.**
G. Johnston

***260-616A. LES PARABOLES DE JESUS.**
J.C. Kirby

***260-617C. THE EPISTLE TO THE EPHESIANS.**
J.C. Kirby

***260-618B. THE CHURCH IN THE NEW TESTAMENT.**
G. Johnston

260-619B. THE RESURRECTION IN THE NEW TESTAMENT. Exegesis of the relevant passages, and discussion of modern theories and doctrines concerning Resurrection. If there is a sufficient number of bilingual students, this seminar will be held in French.
J.C. Kirby

AREA B (HISTORICAL)

260-620A. WORSHIP IN THE NEW TESTAMENT.
J.C. Kirby

***260-621A ROMAN CATHOLICISM FROM 1870 TO THE PRESENT.** A study of major developments within the Roman Catholic Church since Vatican Council I. Extensive use will be made of primary source materials.
H.K. Markell

***260-622B THE MODERN LITURGICAL MOVEMENT.**
J.C. Kirby

260-623A THE ECUMENICAL MOVEMENT. A study of the modern approaches to Christian Reunion and Unity, world councils, and the outstanding leaders. The significance of Ecumenism in the history of the Church in modern times will be considered.
H.K. Markell

***260-624A. THE CHURCH AND THE CITY IN THE ANGLO-AMERICAN WORLD SINCE 1850.**
H.K. Markell

***260-625B. CANADIAN CHURCH HISTORY.**
H.K. Markell

260-628B. ANGLICANS AND NONCONFORMISTS IN NINETEENTH CENTURY ENGLAND. A study of English society in the 19th century in terms of the shifting relationships between the Church of England and the Nonconformist bodies, Protestant and Roman Catholic.
H.K. Markell

***260-630B. PHILOSOPHY AND THEOLOGY.**
J.C. McLelland

260-631A. THE THEOLOGY OF THE CROSS. The intention of this study is to reflect on the tradition Luther called *theologia crucis* as an appropriate contemporary theological response to the experience of the dominant culture of this continent. The course will function as a research seminar, with some lectures, student papers, and individual research.
D.J. Hall

260-638A. THE THEOLOGY OF D.M. BAILLIE. A study in depth of a theologian whose keen insight, constructive presentation and sound judgment entitle him to a place among the significant thinkers of our time.
D.N. MacMillan

260-639B. CONTEMPORARY CATHOLIC THEOLOGY. Christological and ecclesiological implications of several approaches operative in contemporary theology. Emphasis will be placed on the contributions of Dutch, North American and Third World theologians.
E.K. Malloy-Hanley

AREA C (PHILOSOPHY)

260-641A RELIGION AND THE ARTS. See course description for 260-345A.
J.C. McLelland

260-642B PHILOSOPHY OF RELIGION IN THE TWENTIETH CENTURY. See course description for 260-441B.
J.C. McLelland

260-643A PROBLEMS IN PHILOSOPHY OF RELIGION.
G. MacGregor

***260-644A. THE MEANING AND BASIS OF RELIGIOUS BELIEF.**
J.C. McLelland and A. McKinnon

260-645B. MEANING AND INTERPRETATION. An interdisciplinary seminar on hermeneutical problems.
R.C. Culley, J.C. Kirby and J.C. McLelland.

260-660B. DIMENSIONS OF THE PERSON: Studies in Erikson, Fromm, Horney and Jung.
M. Peaston

***260-661A. HUMAN NATURE IN THEOLOGICAL AND PSYCHOLOGICAL PERSPECTIVE.**
M. Peaston

***260-662B RELIGION AND PERSONALITY: THE FORMS OF LOVING.**
M. Peaston

260-663A. BEHAVIOUR CHANGE AND PERSONAL GROWTH. A study in client-centered therapy; behaviour therapy; transactional analysis and existential psychotherapy.
M. Peaston

***260-664B. ANXIETY AND FAITH.**
M. Peaston

260-670A. REPRESENTATIVE SOCIAL THOUGHT IN THE TWENTIETH CENTRUY. An examination and evaluation of the dominant forms of social thought in the twentieth century. Representatives of both religious and secular ethics will be studied.
J.A. Boorman

260-671B. CHRISTIAN SOCIAL RESPONSIBILITY: SOME MAJOR ISSUES. Major, social and ethical problems of today will be identified and analysed. Each student will devote his particular attention to one such issue presenting to the seminar his research dealing with the causes and nature of the problem, the kinds of solution being sought and their moral justification.
J.A. Boorman

AREA D (COMPARATIVE STUDY)

***260-650D. RELIGIONSWISSENSCHAFT: THE HISTORY OF THE DISCIPLINE.**
W. Bijlefelt

260-656A. STUDIES IN THE BHAGAVADGITA.
R.W. Stevenson

397-604D. THE ISLAMIC TRADITION.
C.J. Adams

397-652D. URDU (advanced).
C.J. Adams

397-703D. ISLAMIC THEOLOGY.
I. Izutsu

** Not offered in 1976-77.*

SPECIAL STUDIES

260-680A/680B/690 D.
OLD TESTAMENT

260-681A/681B/691D.
NEW TESTAMENT

260-682A/682B/692D.
HISTORY OF CHRISTIANITY

260-683A/683B/693D.
CHRISTIAN THEOLOGY

260-684A/684B/694D.
PHILOSOPHY OF RELIGION

260-685A/685B/695D.
ETHICAL PROBLEMS

260-686A/686B/696D.
RELIGIOUS PSYCHOLOGY

260-687A/687B/697D.
COMPARATIVE RELIGION

These are tutorial courses designed to meet the research needs of individual students at Master's or Doctor's level in the various disciplines.

ELECTIVE COURSES IN OTHER DEPARTMENTS

With the consent of the Dean of Religious Studies and the instructor concerned graduate students may choose related courses in any other Department of the University. They may also take 40% of their courses in other Quebec universities.

6 THE INSTITUTE OF ISLAMIC STUDIES

The Institute offers courses and undertakes to direct research in preparation for the M.A. and Ph.D. degrees in Islamic Studies. Two years of resident study are normally required for the M.A. degree, five for the Ph.D. degree.

The Institute is concerned with the faith of Muslims, and with the Islamic tradition involving a society and a civilization to which in the past it has given rise and to which in the present it is related. The Institute's special emphasis is on the faith as a contemporary and living force; and on the major change through which the civilization and society are currently going. It would seek such understanding as will enable outsiders to observe those

changes intelligently, Muslims to participate in them intelligently, and both to communicate.

Candidates for degrees in Islamic Studies may, with the consent of those departments, be permitted or required to take relevant courses offered by the Departments of History, Economics and Political Science, Philosophy, Religion and Theology, etc. In special cases these departments also recognize participation in relevant courses offered by the Institute as contributing to their own advanced degrees. Such participation by students from other departments is welcomed by the Institute.

The Institute stresses competence in language. At the master's level, one Islamic language is required, normally Arabic. For doctorate work, all students, Muslim and Western, must have a reading knowledge of *either* French or German, preferably both (for access to Western scholarship on Islam) and two Islamic languages, of which one will normally be Arabic.

The Institute of Islamic Studies maintains a separate library, located on the 9th floor of the Stephen Leacock Building for the support of teaching and research in Islamics. The collection, which is one of the major libraries of its type in North America, consists of more than 75,000 volumes in the principal European languages as well as Arabic, Persian, Turkish, Urdu and other Islamic languages. The library is especially strong in its reference materials and periodical holdings for the Islamic regions.

From September, 1975, a co-operative program has been effected between the Duncan Black MacDonald Center for the Study of Islam and Christian-Muslim Relations of the Hartford Seminary Foundation and the Institute of Islamic Studies. The program is conducted on the McGill campus.

COURSES FOR HIGHER DEGREES

397-602D. SURVEY OF ISLAMIC PHILOSOPHY. (3 hours.) A history of the attempts of Muslim thinkers to adapt Greek philosophy to Islamic revelation; study of the Translation Movement, and Mu'tazila, and the rise of Kalam; readings in al-Kindi, al-Farabi, Ibn Sina, Ibn Rushd, Al-Razi, and other important Muslim philosophers.

397-603B. INTRODUCTION TO RESEARCH MATERIALS FOR ISLAMIC STUDIES. (1 hour.) A practical introduction to the materials academically available for these studies. Some preliminary discussion of research methods, of the preparation of reports and essays; documentation; transliteration. Particular attention is given to the special reference books and serials used in the field.
Mr. Ali

397-604D. INTRODUCTION TO THE ISLAMIC TRADITION. (3 hours.) A course to introduce the uninitiated student to major aspects of the Islamic tradition; Jahiliyah times, the Prophet, Qur'an, Hadith, Kalam, Shari'ah, Falsafah, Tasawwuf, Shi'ah and the sects, institutions, and modern developments. Emphasis is given to the principal Islamic and Western sources in each of these areas.
Professor Adams

397-605D. ARABIC LITERATURE: A.D.c500-1970's. (3 hours). A survey of the literature of the Arabs in pre-Islamic times with special emphasis on the mu'allaqat. Developments following the rise of Islam and its influence on literary production in prose and poetry, emphasizing selected poets and writers and considering new themes, genres, and thought in the Umayyad and the 'Abbasid periods. A condensed treatment of Arabic literature between the fall of Baghdad in 1258 and the Napoleonic war in the Middle East, and a more detailed study of the Arab literary renaissance in the 19th century and the development of fiction, drama, and poetry in the 20th century. No knowledge of Arabic is required for this course. Use will be made of available English translations.

397-610D. HISTORY OF ISLAMIC CIVILIZATION: THE CLASSICAL PERIOD. (3 hours.) The origins of the early Islamic state in Arabia and the Umawl Caliphate. The growth of Islamic civilization, and the 'Abbasi Empire until the Seljuk period. The rise of the Fatimis. The Caliphate of Cordoba.
Professors Little and Verdery

397-611D. HISTORY OF ISLAMIC CIVILIZATION: THE MEDIAEVAL PERIOD. (3 hours.) The Seljuks, and the mediaeval synthesis. The Moors in Spain and North Africa. The Crusades. The Mongols and the destruction of the Baghdad Caliphate. The Mamluk, Persian, Turkish and Indian Empires until 1700.
Professor Little

297-614D. THE HISTORY OF ISLAMIC INDIA. The Arabs in India; the establishment of the Delhi Sultanate; the interaction of Islam and Hinduism. The Mughals: political history; social, intellectual, and religious trends. The fall of the Mughals and the end of Muslim rule in India.
Professor S. Alvi

397-621D. INTRODUCTORY ARABIC.

397-622D. LOWER INTERMEDIATE ARABIC.

397-623D. HIGHER INTERMEDIATE ARABIC.

397-625D. ADVANCED ARABIC. (3 hours.) Critical reading of texts in a particular field; for example, readings in the historians, with Professor Little; or in the theologians, in connection with Islamics 702 below, or the legists, in connection with Islamics 706. As the content may vary, this course may be repeated for credit.

397-631D. INTRODUCTORY TURKISH.

397-632D. LOWER INTERMEDIATE TURKISH.

397-633D. HIGHER INTERMEDIATE TURKISH.

397-634D. ADVANCED TURKISH. (This course will normally be related to Islamics 722 below; Prerequisite: Islamics 397-622D or 397-641D.)

397-641D. INTRODUCTORY PERSIAN.

397-642D. LOWER INTERMEDIATE PERSIAN.

397-643D. HIGHER INTERMEDIATE PERSIAN.

397-644D. ADVANCED PERSIAN. (Prerequisite: Islamics 622.)

397-651D. INTRODUCTORY URDU.

397-652D. LOWER INTERMEDIATE URDU.

397-653D. HIGHER INTERMEDIATE URDU.

397-654D. ADVANCED URDU. (Prerequisite: Islamics 622 or 641.)

397-670D. ISLAMIC ART AND ARCHITECTURE. Study of the development of Islamic art and architecture as related to the principles of Islam as a religion and regional traditions.

397-700D. Ph.D. PRELIMINARY EXAMINATION IN ISLAMICS. RESEARCH SEMINAR. For all students writing theses and all others engaged in research. (Seminar, 2 hours.)
Professor Adams and Staff

Several of the following seminars will be given each year.

397-702D. ISLAMIC THEOLOGY: SEMINAR ON SPECIAL QUESTION. (2 hours.) The problem considered will vary from year to year. The course may, therefore, be repeated for credit.

397-703D. READINGS IN CLASSICAL ARABIC PHILOSOPHERS. (Seminar, 2 hours.) Consideration of the development of philosophic thought among the Muslims, and its relation to the late Greek background; with special reference to Ibn Sina (Avicenna). Some of his writings, especially the *Kitab al-Najat,* or al-Ghazzali's *Tahafut,* will be read in Arabic. The prose of Falsafah in classical Islamic culture and thought.

397-704D. ISLAMIC THEOLOGY. (Seminar, 2 hours.) A study of significant aspects of the Muslims' attempt to give intellectual expression to their faith in different periods in the past.

397-705D. THE SOCIAL INSTITUTIONS OF ISLAM I. Government and State (Seminar, 2 hours.) A survey of the evolution of the various patterns and concrete manifestations of Muslim political theory and practice through the classical and mediaeval periods of Islamic history. The rise of modern states and political problems in various Muslim countries.

397-706D. THE SOCIAL INSTITUTIONS OF ISLAM II. Law. (Seminar, 2 hours.) The role of law in Islamic thought and society, considered historically in terms of its theological, political, and sociological aspects. The impact of modern legal systems and ideas, contemporary movements of codification, and the problems of legislation.

397-707D. SEMANTICS OF THE QUR'AN. (Seminar, 2 hours; half course.) An analytical study of Qur'an vocabulary. By applying the methods of analysis that are being developed in structural and field semantics to the verses of the Qur'an, the aim is to isolate the general conceptual scheme that underlies the Weltanschauung of the sacred book of Islam.

397-708D. QUR'AN EXEGESIS. (2 hours) A study of two or three suras taken as units, and of a number of Qur'anic passages and key words. Attention will be given to issues of style, form and chronology, as well as to the content matter, the latter including a consideration of the history of the interpretation of these sections. The suras and passages considered will vary from year to year. The course may, therefore, be repeated for credit.

397-710D. SHI'AH THOUGHT. (Seminar, 2 hours.) A history of thought among the Shi'ah with consideration of important thinkers, movements and books.

397-721D. ISLAMIC DEVELOPMENTS IN THE MODERN ARAB WORLD. (Seminar, 2 hours.) Internal reform movements and responses to external pressure, 1800 to the present.
Professor Verdery

397-722D. THE DEVELOPMENT OF SECULARISM IN MODERN TURKEY. (Seminar, 2 hours.) An analysis of the transition from Ottoman institutions and ideas to those of contemporary Turkey. After considering the 18th century attempts at reform, attention is given to the changes during the *Tanzimat,* "Young Turk", and Republican periods, as a preparation for an understanding of contemporary problems raised by secularization.

397-723D. ISLAMIC DEVELOPMENTS IN MODERN INDIA AND PAKISTAN. (Seminar, 2 hours.) Significant movements in Islamic thought and political action, since the Mughul downfall. The influence of Sirhindi; Waliyullah and his school; the Mujahidin; 1857 De'oband; Aligarh; Azad and Muslim participation in Indian nationalism; Iqbal; Pakistan. The Munir Report; Pakistan constitutional and ideological issues; Muslims in India since partition.
Professor Adams

397-724D. DEVELOPMENT OF THE ISLAMIC TRADITION IN INDONESIA. (2 hours.) Pre-Islamic background. The arrival of the Islamic tradition; Javanese elements in its development, and

Hukum Adat. Muslim states versus the Dutch company; the Padri war. Islamic policy of the Dutch. Recent Islamic movements and political parties (Sarekat Islam, Muhammadijah, Masjumi, Nahdatul Ulama, Persatuan Islam, M.I.A.I., etc.). Nationalism.

397-725D. THE ISLAMIC HISTORY OF WEST AFRICA. (2 hours.) A study of an Islamic role in the development of institutions and ideas in the western and central Sudan, from the 11th century to the present day. With special reference to (i) relations with the wider Muslim World, (ii) sources, literary and archaeological, for a study of this area.

397-726D. ISLAMIC DEVELOPMENTS IN MODERN IRAN. (2 hours.)

397-727D. MODERN HISTORY OF THE ARABIAN GULF STATES. The history of the Arabian Peninsula in modern times with special emphasis on the Gulf States. Concentration will be on Saudi Arabia, Kuwait, Bahrain, Qatar, the Union of the Arab Amirates, and 'Uman from the 18th century to the present.
Professor A. Abu-Hakimah

397-728D. ISLAMIC DEVELOPMENTS IN MODERN NORTH AFRICA. The relationship of the Maghrib to the Muslim East and Europe in mediaeval and modern times. Religious developments in North Africa before and after European conquest. The growth of nationalism in Libya, Tunisia, Algeria and Morocco. The interaction of Arab and French culture and its effect on Islam.

397-729D. ISLAM AND THE WEST. (2 hours). Muslim views of the 'West' -- especially Christianity -- and the 'Western' views of Islam from the 9th till the 19th century, with particular attention to extant primary sources.

397-730B. THE STUDY OF ISLAM IN EUROPE AND NORTH AMERICA SINCE THE EARLY NINETEENTH CENTURY. A critical study of the extent to which cultural and ideological trends in the West since the early 19th century are reflected in and have influenced Western academic descriptions and interpretations of Islam.

397-731D. ISLAM IN THE MODERN WORLD. (Seminar, 2 hours.) A conspectus of the Islamic world's response to the internal decline in the eighteenth century and external encroachment in the nineteenth. A comparative study of constitutional developments, religious reform movements, nationalism, etc.

397-740D. THE MYSTICAL TRADITION OF ISLAM (SUFISM). (Seminar, 2 hours.) A historical and analytical study of great Sufis, their writings and their central problems. Emphasis will be laid upon reading Sufi texts in Arabic and Persian. As the content of the course will vary, this course may be repeated for credit.
Professor Landolt

397-745A and 397-745B: SPECIAL TOPICS. The subject matter of the course will change from year to year and therefore the course may be repeated for credit.

397-750D. SOCIAL AND ECONOMIC DEVELOPMENT IN MUSLIM COUNTRIES. (Seminar, 2 hours.) A study of development problems in the light of a historical survey of various reform policies in different countries; contemporary ideas of, and policy towards, development as shown in economic, technical, political and educational measures; with emphasis on the relevance of Islamic values to development problems.

397-760D. MUSLIM HISTORIOGRAPHY. (Seminar, 2 hours.) Readings in historical writings and consideration of the critical problems arising from the use of such materials.
Professor Little

397-761D. IRAN FROM THE MONGOLS TO THE SAFAVIDS. (Seminar, 2 hours.) Historical developments in Iran, Iraq and Anatolia after 1258. The Ilkhanids and post-Mongol successor "states". The Turkman dynasties: Qara-Goyunlu. Shi'ism, Sufism, and the rise of the Safavids in 1500.

For information about courses to be offered in 1976-77 please consult the Director.

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Canada H3C 3G1

Session 1976

UNIVERSITÉ McGILL

ÉCOLE FRANÇAISE D'ÉTÉ

60ème SESSION

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26 juin - 8 août 1976

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TIA HABIB

Secrétaire de l'École Française d'Été

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Directeur de l'École

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KENNETH UMLAND, B.A., Diplôme d'École Normale Supérieure (Dakar), M.A. (McGill).

GENERAL INFORMATION

McGILL UNIVERSITY

McGill University was founded under a bequest of the Honourable James McGill, a wealthy Montreal merchant of Scottish descent.

The University was granted a Royal Charter in 1821. It is selective in its admission policy and internationally known for its high academic standards.

THE FRENCH SUMMER SCHOOL

The French Summer School is a coeducational school established in 1904.

It is an integral part of the *Faculty of Arts* which controls its administration ; the M.A. studies are under the responsibility of the *Faculty of Graduate Studies and Research*. The *courses carry credits* towards McGill undergraduate and graduate degrees ; such credits are also *transferable* to North-American Institutions of Higher Education.

THE DIVISION SYSTEM

French Summer School students are grouped into three Divisions : B (undergraduate level), C (graduate level), D (Master of Arts).

AIMS OF THE SCHOOL

English-speaking students and teachers who wish to attain real fluency in French and, at the same time, get acquainted with the literature, fine arts and civilization of French-speaking peoples, will find appropriate courses at both undergraduate and graduate levels.

French-speaking students and teachers will find many appropriate Language, Literature and Civilization courses at the graduate level.

The French Summer School program is especially built around the academic requirements of :

Undergraduates who have taken 4 semesters of French and who wish to improve their speaking (and writing) ability (*Division B*)

Those having obtained a B.A. degree or its equivalent with sufficient background in the French Language who wish to take courses at the graduate level in Language, Literature and Civilization (*Division C*)

Graduates who are presently working towards an M.A. or a Ph.D. at Universities other than McGill and who wish to transfer the credits earned at the French Summer School (*Division C*)

Teachers of French, at the Elementary or Secondary School, College or University, who desire an effective "refresher" (*Division B or C*)

Graduates who wish to work towards an M.A. at McGill University by attending sessions at the French Summer School (M.A. without or with thesis) (*Division D*)

IMMERSION IN FRENCH

Linguistic fluency is effectively promoted by the *exclusive use of French* at all times during the session. The fact that half of the students are French-speaking helps to create a French atmosphere. All courses are taught in French, by experienced Teachers who have graduated from and are teaching in French-speaking Universities. The average student-professor ratio varies between 12 and 15 students to one professor. The Teaching Staff is accommodated in the same residences as the students and associates freely with them at meals, in discussion groups and in the very numerous cultural and social activities.

CULTURAL AND SOCIAL ACTIVITIES

These activities take place in the afternoon or evening. Their diversity allows for free choice according to availability of spare time, personal tastes or whims of the moment. These activities constitute an "invisible teaching" which effectively completes that of the academic courses and allows students to experience thorough immersion in French during their stay at the School.

1. French folk-songs ;
2. Evening musical concerts ;
3. Talent shows ;
4. Films (short, educational and full-length features) ;
5. Selected T.V. programs ;
6. Lectures, conferences, debates, discussion groups ;
7. Varied sports : tennis, swimming, ping-pong, horse-back riding, etc, ;
8. French out-door café ;
9. Dances ;
10. Excursions ;
11. Theatre ; etc.

THE GET-ACQUAINTED-WITH-QUÉBEC-PROGRAM

The fact that it is held in Montréal explains in part the continued favour enjoyed by the McGill French Summer School. Montréal, the bilingual metropolis of Canada, is the cultural centre of the French-speaking Province of Québec.

This program has been organized in order to introduce students to the realities of present-day Québec.

The program includes :

(a) courses on the different aspects of Québec civilization and culture ;

(b) public lectures given by leading figures of Québec ;

(c) cinema, folklore, songs ;

(d) several informal outings to places of historical, social and cultural interest in and around Montréal ;
— visits in Old Montréal ;
— meetings with representatives of different social and professional groups ;
— visits in Museums and Art Galleries ;

(e) several excursions to places of interest such as Québec City and the Eastern Townships.

In addition, students will find in Montréal all they need in order to practise French. The French Summer School is located in the heart of the city whose various resources include French radio, T.V. and cinema, French-speaking churches, boutiques, book-shops, theatres and restaurants. At the beginning of the session, touristic information (maps, booklets, etc.) will be given to students. An information bulletin, l'« Aide Mémoire », printed daily by the French Summer School and distributed to students and professors each morning, contains suggestions on particularly interesting entertainments presented in the Montréal area.

LANGUAGE LABORATORY

One of the most effective teaching aids used at the French Summer School is the McGill University Language Laboratory. The excellence of its equipment makes it one of the best tools available for programmed and individual practice. The Tape Library places a considerable variety of audio material (readings in prose and verse by elocutionists and contemporary writers ; plays, acted by the best French companies) at the disposal of French Summer School students.

THE GENERAL ASSOCIATION OF THE FRENCH SUMMER SCHOOL STUDENTS

All the students of the School are grouped under a General Association. Every summer the M.A. students elect permanent delegates who carry out their duties throughout the year.

INFORMATION FOR PROSPECTIVE STUDENTS

STATUS OF STUDENTS IN THE SCHOOL

The School is a **residential School** which accepts only *full-time resident students,* who pay full tuition fees. (Exception is made for students enrolled in course 398-300c).

Students qualified to take *Division C or D* courses may be admitted as *non-residents,* provided they are living in Montréal during the year [1].

(1) However, it is strongly advised to Division C and D students who can do so, to reside at the School, this being much more beneficial to them.

APPLICATION FOR ADMISSION

DIVISION B AND C

Application to the School must be made on an Application form (*Demande d'admission*) obtainable from the School Secretary.

The completed Application form, accompanied by a **Letter of Recommendation,** a **Transcript of academic records** and a **Deposit** of $50. in **Canadian currency** must reach, before June 15, the French Summer School Secretary's Office (Peterson Hall, P.O. Box 6070, Station A, Montréal, Québec, Canada H3C 3G1). **Since the number of students admitted to the School is limited,** it is strongly advisable that students apply as soon as possible. Accepted applicants will receive a **Letter of Admission** from the French Summer School.

DIVISION D

Application to the School must be made on an **Application for Admission to the Faculty of Graduate Studies and Research** form obtainable from the School Secretary.

The completed Application form together with the required documents and an application fee of $15. in Canadian currency must reach, before June 15, the French Summer School Secretary's Office (Peterson Hall, P.O. Box 6070, Station A, Montréal, Québec, Canada H3C 3G1). Students from the UNITED STATES must **also** submit Graduate Record Examination Scores.

The decision will be mailed directly to the applicant by the Faculty of Graduate Studies and Research.

Students who have not sent in by Registration Day an *official final transcript of their degree,* because they have just completed their senior year in June immediately preceding the Summer School session, must send this document in as soon as possible, and *not later than the 1st of August.*

N.B. Division D students having attended a previous session of the French Summer School must inform the school of their intention to register each subsequent year *before the 15 of June.*

ADMISSION REQUIREMENTS

Applicants for admission must meet specific requirements with respect to age, general education and proficiency in French. Admissions are selective.

AGE

minimum : 18, before January 1st, 1977.

GENERAL EDUCATION AND PROFICIENCY IN FRENCH

Division B : 2 years of French at CEGEP, College or University or having an equivalent knowledge of French.

Division C : Students should normally have graduated (or be graduating) with a Major in French or sensibly the equivalent. They should be able to speak with reasonable fluency (using an active vocabulary of at least 2,000 words), write correct French and experience no difficulty in reading French.

Division D : See "Réglementation de la Maîtrise", p. 18.

DATES AND REGISTRATION

The French Summer School will begin on Saturday, June 26 and end on Saturday, August 7.

Students in residence must arrive at the School before midnight on Saturday, June 26. Meals taken at the cafeteria of the Royal Victoria College previous to the Saturday dinner (5:00 to 6:30), are not included in the Residence charges.

REGISTRATION will take place at the **Royal Victoria College** (3425 University St.) on **Saturday, June 26** and **Sunday, June 27.**

All non-resident students must present themselves on **Saturday afternoon, June 26,** in the following order :

ABC	names at 2:00	MNOP	names at 3:30
DEFG	names at 2:30	QRS	names at 4:00
HIJKL	names at 3:00	T to Z	names at 4:30

All resident students must present themselves on **Sunday afternoon, June 27,** in the following order :

ABC	names at 2:00	MNOP	names at 3:30
DEFG	names at 2:30	QRS	names at 4:00
HIJKL	names at 3:00	T to Z	names at 4:30

Students will be given instructions concerning their registration. The professors will be at the students' disposal during Registration to provide them with complementary information on the content of courses, on the oral and written work requested in these courses, etc.

No resident student will be admitted at the School if he arrives later than Saturday, June 26.

Classes will begin on Monday morning, June 28.

Changes of courses can be made until Friday, July 2 (included), with the approval of the professor of the newly chosen course. No change can be effected after this date.

Classes will end on Friday, August 6.

The Closing Exercises will take place on Friday, August 6, at 7:30 p.m.

On Saturday, August 7, the professors will be at the students' disposal to supply information or for personal conversation, from 11:00 a.m. to 1:00 p.m. at the Royal Victoria College.

Students must have left the School by 4:00 p.m. on Sunday, August 8.

GRADING AND CREDIT SYSTEM

Courses are graded in percent with the following correspondences : A (80-100%) ; B (65-79%) ; C (55-64%) ; D (45-54%) ; F (0-44%).

All reports of standing, transcripts and other documents will show both letter grades and reported percentage grades.

Grades A, B, C are termed satisfactory passes, D a conditional pass and F a failure.

In Division C and D a mark under 65% is considered a failure.

Each course carries 2 credits. A double course carries 4 credits.

TUITION FEES AND RESIDENCE CHARGES

Tuition Fee
- Canadian students ..... $450 Can.
- Non-Canadian students ..... $500 Can.

Residence (single room and board) ..... $565 Can.

Division D students : those attending their D5 or D6 session for the **M.A. without thesis** are eligible for the following reduced rates :

Tuition Fee
- Canadian students ..... $185 Can.
- Non-Canadian students ..... $215 Can.

This advantage of reduced fees is applicable only to those students having accomplished their scholarity at the French Summer School from the beginning (Da or D1).

In very exceptional cases, students may, on an individual basis, be admitted as partial (one or two courses) at the reduced rate of $150. or $250.

N.B. : In order to facilitate the Registration procedure, **students are strongly advised to mail in advance the fees for Tuition and Residence.** Cheques or Money Orders should be made payable to "McGill University" and sent to the Secretary of the French Summer School (Peterson Hall, McGill University, P.O. Box 6070, Station A, Montréal, Québec, Canada, P.Q. H3C 3G1).

Fees should be mailed in BEFORE June 14. After this date, students should not send for their fees, but pay them after the Registration Day.

REFUNDS :

1. The Deposit fee of $50.00 is not refundable. Tuition fees and Residence charges are refundable any time before Registration Day.
2. After Registration Day, refund of Tuition fees only is obtainable provided students withdraw *before* Saturday July 3. Refund will be of $325. Can. (if Canadian) or $375. Can. (if Non-Canadian). For Division D students attending their D5 or D6 session, refund will be $95. Can. (if Canadian) or $125. Can. (if Non-Canadian). From Saturday July 3 onwards, no refund will be made.

REPORTS OF STANDING AND TRANSCRIPTS

The Reports of Standing are issued and mailed to the students by the Registrar's Office within the four weeks following the end of the session.

Requests for transcripts should be addressed to the Registrar of the University (Registrar's Office, Transcripts Department, McGill University, F. Cyril James Building, P.O. Box 6070, Station A, Montréal, Canada, H3C 3G1), who will forward them on payment of a fee of $1.00 for each of the first two copies and $0.10 for each additional copy. **Students who intend to apply such credits towards a degree are recommended to obtain the consent of their own Institution or Department to the transfer of French Summer School credits before attending the School.**

RESIDENCE

The Residence is the Royal Victoria College, 3425 University St. (Please see "Plan de l'Université McGill", p. 11).

Each student has a single study room and there are spacious common rooms.

All rooms are furnished. Linen and blankets are provided.

The Residence is equipped with complete laundry facilities.

Meals (breakfast, lunch and dinner) are served every day, including Sunday, in the dining-room of the Royal Victoria College.

The University tennis courts and swimming pool are open to French Summer School students.

HEALTH SERVICE

Students in residence are entitled to the University Health Service (517 Pine Ave. West, tel.: 392-5446) for counselling and guidance. For emergencies recourse can be had at the Royal Victoria Hospital clinic on University Street, close to the Residence (tel.: 842-1251, local 1885). Referral to a private physician for other treatment will be arranged but the School cannot assume any responsibility for medical treatment.

SCHOOL DISCIPLINE

On Registration Day, students will be given necessary information concerning residence and study. Rules have been kept to the minimum compatible with the efficient administration of a University School and the necessities of community life in which the normal discipline is the respect that each individual accords to the collective will of the group.

The rule at the French Summer School being that of *self-discipline*, each student must consider himself as personally responsible for the smooth running of the School in general and for the respect of the discipline by all.

a) *Telephones:* Telephone calls necessitating the use of English must be made outside the residences. Students would be well advised to request their parents not to call them at their residence except in an emergency.
b) *Visitors* cannot be entertained in the residences unless they can speak French.

Moreover, every student admitted at the French Summer School undertakes to follow these rules:

1° THE EXCLUSIVE USE OF FRENCH AT ALL TIMES, IN AND OUT OF CLASS, AND ESPECIALLY IN THE RESIDENCE. EVERY APPLICANT PLEDGES HIMSELF TO USE ONLY FRENCH DURING THE SESSION IN ALL CIRCUMSTANCES. THE SCHOOL EXPECTS EVERY STUDENT TO OBSERVE THIS RULE VERY STRICTLY, AS IT WAS INSTITUTED AT THE REQUEST OF THE STUDENTS AND IN THE INTEREST OF ALL.

2° EVERYONE'S FREEDOM IS LIMITED BY THE OTHERS'. CONSEQUENTLY, IN AND AROUND THE RESIDENCE, AND AT NIGHT ESPECIALLY, AVOID ANY NOISE THAT MIGHT DISTURB THOSE WORKING OR RESTING.

Any student who does not follow these rules puts himself in the position of being excluded immediately from the School; every student who applies to the French Summer School assents to the application of the School's rule concerning this last point[1].

TEXTBOOKS AND LIBRARY FACILITIES

Students are required to own a copy of all the "Manuels" and "Textes" listed for the courses they take.

They should bring with them the dictionaries and grammars which they use at home or at school.

Readings for courses are available in the Redpath and McLennan Libraries. The majority of books listed as "Lectures obligatoires" and "Lectures conseillées" are found in the Reserve section for the benefice of French Summer School students.

Guided visits (in French) and information on the cataloguing system of the Libraries will be arranged.

IMMIGRATION REQUIREMENTS

Students who are not residents of Canada should bring with them for presentation to Canadian Immigration Officers their **Letter of Admission.**

United States citizens should carry some documents of identification such as passports, birth certificates, and similar papers in order to facilitate their return to their country.

Students who are citizens of the United States by naturalization should carry their naturalization certificates, and those who have not acquired such status should present evidence that they are legally in the United States and that they will be allowed to re-enter that country after their temporary stay in Canada.

BANKING ARRANGEMENTS

It is recommended to out-of-town students that they bring letters of credit or use traveller's cheques, rather than draw ordinary cheques on their home banks. The School has no facilities for cashing cheques.

(1) A student excluded from the School for disciplinary reasons cannot claim any reimbursement of fees.

Programme des cours de 1976

DIVISION B *(niveau sous-gradué)*

La Division B est réservée aux étudiants **sous-gradués non-francophones.**

Le programme normal est de quatre cours mais il est permis de suivre un ou deux cours en plus ou en moins.

Les étudiants plus avancés peuvent, après consultation avec le Directeur, suivre un cours gradué en Division C ou D. On notera cependant qu'à McGill une note inférieure à 65% dans un cours gradué est considérée comme un échec.

Chaque cours vaut 2 crédits.

Programme des cours en Division B

398-422c. Cours intensif de vocabulaire systématique et expressions usuelles

Cours quotidien de perfectionnement dans la pratique de la langue parlée (cinq heures par semaine).

Séances de conversation par classes de *huit étudiants* environ. Chaque séance se termine par un commentaire des principales difficultés grammaticales et lexicologiques rencontrées au cours de la conversation. *Tests de contrôle hebdomadaires.*

Manuel : J.C. Lemyze, *Par exemple* (Livre II et Dialogues II) (Centre Educatif et Culturel, Montréal).

Directeur du cours : Jean-Claude Lemyze

398-423c. Cours intensif de phonétique

Cours quotidien (cinq heures par semaine). Exposé du système phonologique, des sons et des habitudes articulatoires du français en fonction des difficultés de prononciation que rencontrent les non-francophones. Les étudiants seront assistés de nombreux instructeurs qui travailleront *individuellement* avec eux sous la direction du professeur. En outre, le laboratoire de langues sera à la disposition des étudiants du lundi au vendredi de 9h à 17h. *Des cassettes individuelles seront mises à la disposition des étudiants qui apporteront leur magnétophone.*

Manuel : J.C. Lemyze, *A l'écoute du français* (en vente au Secrétariat de l'Ecole).

Directeur du cours : Jean-Claude Lemyze

398-424c. Grammaire

Révision des règles fondamentales de la grammaire française. Exercices pratiques oraux et écrits.

Manuel : Sonet and Shortliffe, *Standard Review of French* (Harcourt, Brace and Co.).

Nelly Courtois

398-425c. Composition

Exercices pratiques dans l'art d'écrire : narration, description, dialogue, essai et dissertation. Ce cours est destiné aux étudiants qui désirent perfectionner leur français écrit.

Manuel : J. Beaugrand, *Les voies de la composition française : Manuel pratique de la composition française* (tomes I et II) (Classiques Hachette).

Nelly Courtois

398-426c. Stylistique pratique

Cours destiné à compléter la grammaire française et à familiariser l'étudiant avec les ressources du français afin d'enrichir et de raffiner son style.

Manuel : F. Legrand, *Méthode de stylistique française à l'usage des élèves* (J. de Gigord, éd., 15, rue Cassette, Paris).

Nelly Courtois

398-427c. Connaissance du Québec

Cours de langue et de civilisation qui permettra de perfectionner l'expression orale et écrite tout en prenant un contact direct avec la société québécoise d'aujourd'hui.

Sous la direction de moniteurs, les étudiants se rendront par petits groupes visiter des institutions, des industries, des groupes politiques ou socio-culturels divers ; ils rencontreront des hommes politiques, des représentants du monde syndical, des milieux artistiques, sportifs, etc...

Ces activités auront lieu l'après-midi ou le soir et chaque étudiant devra en suivre un minimum de trois par semaine. Chacune des activités devra faire l'objet d'un compte rendu écrit d'environ deux pages avec double interligne.

Directeur du cours : Terrance Hughes

398-428c. Poésie québécoise contemporaine

A travers une étude de différentes œuvres marquantes de la poésie québécoise, on essaiera de découvrir les principales étapes de son évolution. Parmi les poètes qui seront étudiés, signalons Saint-Denys Garneau, Anne Hébert, Rina Lasnier et Paul Chamberland.

Textes : J. Cotnam, *Poètes du Québec* (Fides, Montréal, 1969).

Terrance Hughes

398-429c. Civilisation québécoise de 1945 à nos jours

Ce cours d'initiation à la civilisation québécoise ne présuppose aucune connaissance de la matière. Différents aspects de la société québécoise, la vie sociale, économique et culturelle, seront étudiés à l'aide d'œuvres littéraires et artistiques. L'accent sera mis sur la réflexion et les recherches collectives.

Textes : M. Rioux, *La question du Québec* (Seghers, Paris, 1969) ; *Les Québécois* (Seuil, Paris, 1974).

Ouvrages à consulter : M. Brunet, *Québec, Canada anglais, deux itinéraires, un affrontement* (H.M.H., Montréal, 1969) ; J. Lacoursière et al, *Canada-Québec : synthèse historique* (Ed. du Renouveau Pédagogique, Montréal 1973).

Terrance Hughes

398-430c. Du roman à l'écran

Une fois présenté aux étudiants les grandes lignes du langage cinématographique, il s'agira de voir, à la lumière d'œuvres littéraires déjà adaptées à l'écran, comment un roman devient scénario, puis film. Ce cours demandera la participation constante de l'étudiant qui devra donner pour chaque œuvre étudiée sa « vision d'adaptation » qu'il confrontera par la suite avec le film.

Le programme définitif sera déterminé parmi les *œuvres suivantes dont la lecture est conseillée :* G. de Maupassant, *Une partie de campagne ;* A. Gide, *La symphonie pastorale ;* F. Mauriac, *Thérèse Desqueyroux ;* Diderot, *Jacques le fataliste (Histoire de Mme de la Pommeraye)* ; M.C. Blais *Une saison dans la vie d'Emmanuel* ; A. Hébert, *Kamouraska.*

Tous les films illustrant ce cours seront projetés dans le cadre du programme général de cinéma de l'Ecole, mais certains extraits pourront à nouveau être projetés en classe.

Alain Julien

398-431c. Explication de textes

Ce cours a pour but d'initier les étudiants aux méthodes d'explication de textes à partir de textes français et québécois modernes et contemporains.

Des textes polycopiés seront distribués aux étudiants au début de la session.

Terrance Hughes

398-432c. Cinéma français : Jean Renoir

Ce cours se propose de donner un aperçu de l'évolution du cinéma français des origines à nos jours à partir de l'œuvre d'un de ses plus grands représentants.

Lectures conseillées : A. Bazin, *Jean Renoir* (Ed. Champ Libre, 1971) ; J. Renoir, *Ma vie et mes films* (Flammarion, 1974) ; G. Sadoul, *Le cinéma français* (Flammarion, 1962).

Alain Julien

398-433c. Cinéma québécois

Après un rappel des origines du cinéma québécois, un examen de ses structures actuelles de production et de distribution, le cours mettra l'accent sur l'inventaire qualitatif du cinéma québécois contemporain.

Lectures conseillées : G. Marsolais, *Le cinéma canadien* (Ed. du Jour, 1968) ; E. Battie, *A Handbook of Canadian Film* (Peter Martin Associates Ltd. in association with "Take One", 1973) ; J.P. Tadros, M. Couelle, C. Tadros, *Le cinéma au Québec : Bilan d'une industrie* (Ed. Cinéma Québec, 1975).

Alain Julien

398-434c. Théâtre en action

Ce cours s'adresse aux étudiants non-francophones qui désirent perfectionner leur français parlé en montant et en interprétant des poèmes et des textes tirés du théâtre moderne.

Les œuvres à étudier seront choisies en collaboration avec les étudiants.

Kenneth Umland

PROGRAMME SPÉCIAL

398-300c. Cours accéléré de français parlé
(Accelerated learning of spoken French)

Daily and intensive practice of spoken French by means of dialogues based on concrete and everyday situations with individual and collective exercises allowing students to improvise freely.

This course intended for *beginning students having no previous knowledge of French,* is based on the work of Dr. G. Lozanov, Director of the Research Institute od Suggestology in Sofia, Bulgaria, and on the experiences of accelerated learning of living languages according to the Lozanov method as carried out since 1973 by the General Direction of the Staff Development Branch of the Canadian Government Public Service in Ottawa.

The objective of this course is to bring the participants to a level equal or superior to that of *Voix et Images de France I or Dialogues Canada I,* and to enable the students to speak French with some degree of fluency by the end of this six week course.

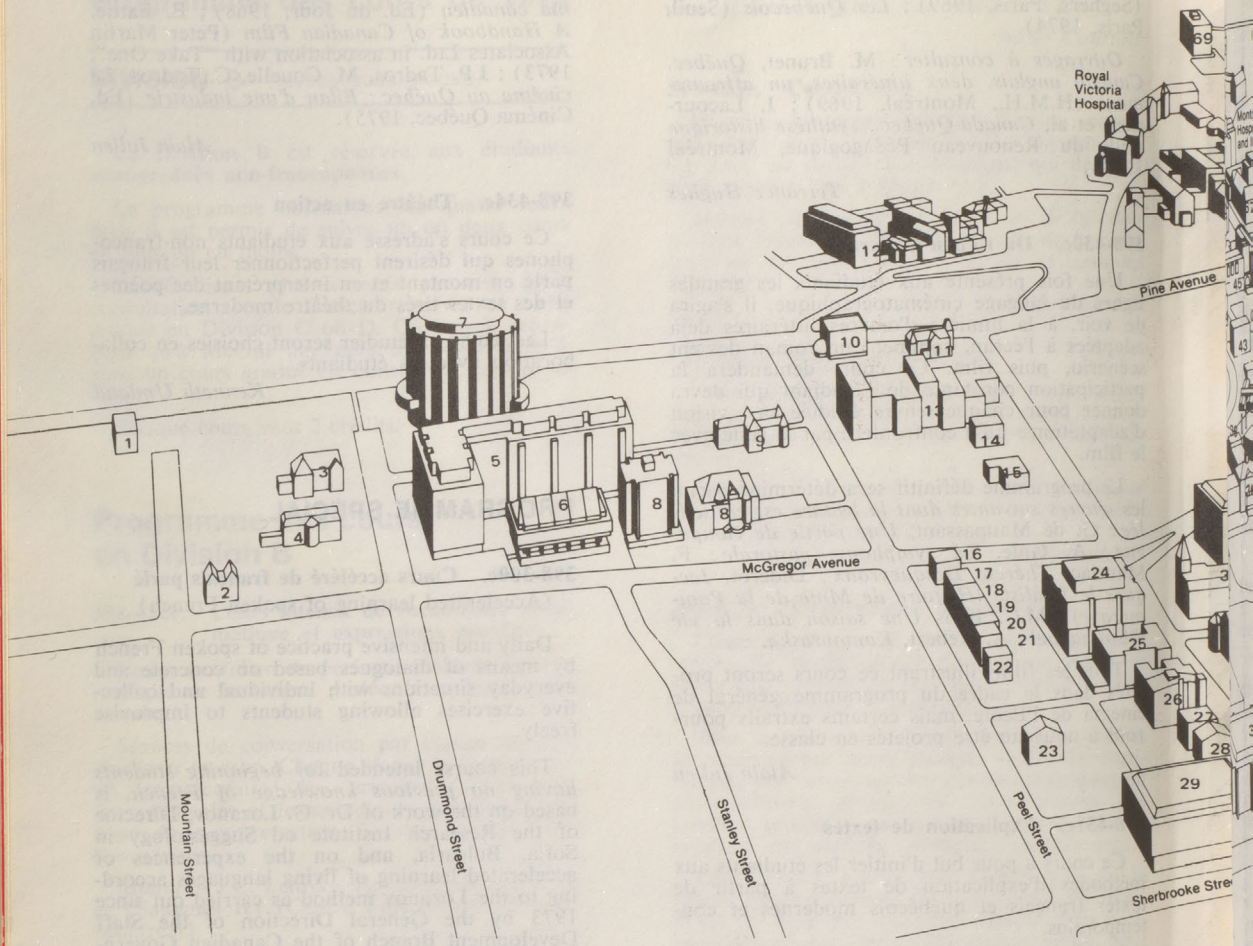
The teaching consists of a *three-hour daily course* during six weeks (except Saturdays and Sundays) in groups composed of a *maximum of 12 students.*

Optional activities in the afternoon and evening, designed to progressively create *immersion* in French, both socially and culturally as well as linguistically, will be offered.

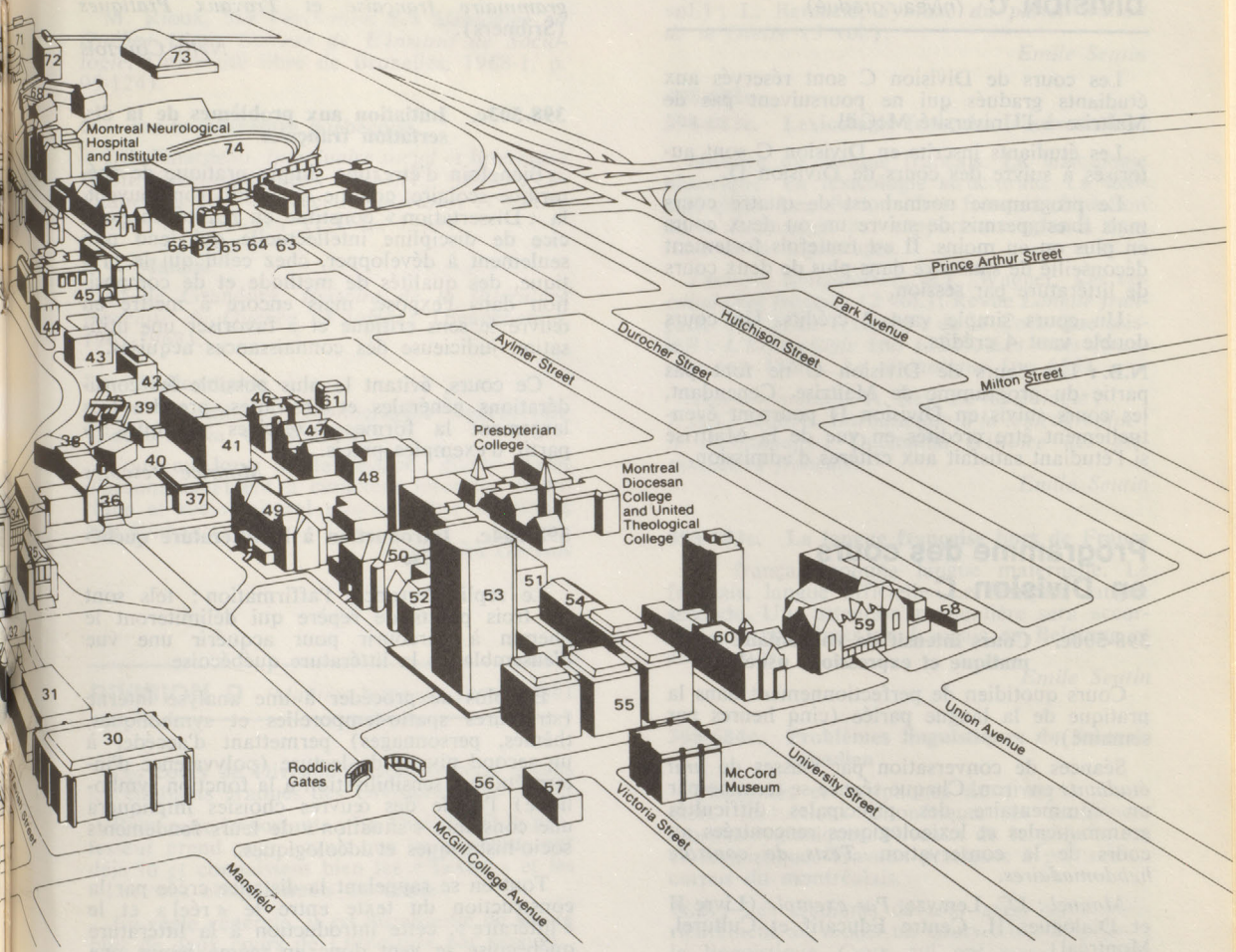
The course carries *eight undergraduate credits.*

Full-time residence at the school is not compulsory for residents of the Montreal region.

Texts will be available at the Office of the French Summer School at the beginning of the session.



1. Beatty Hall
2. Martlet House
3. Davis House
4. Hosmer House
5. Pavillon des sciences biologiques Stewart
6. Serres
7. Pavillon des sciences médicales McIntyre
8. Chancellor Day Hall
9. Institut d'hygiène mentale
10. Purvis Hall
11. Duggan House
12. Institut Allan Memorial
13. Faculté des sciences de l'éducation
14. Hugessen House
15. David Thomson House
16. 3511 à 3465 rue Peel
17. 3495/91 rue Peel
18. 3487 rue Peel
19. 3483 rue Peel
20. 3479 rue Peel
21. 3475 rue Peel
22. 3465 rue Peel
23. 3437 rue Peel
24. Centre universitaire
25. Peterson Hall
26. Faculty Club
27. 3438 rue McTavish
28. 3434 rue McTavish
29. Pavillon Samuel Bronfman
30. Bibliothèque McLennan
31. Bibliothèque Redpath
32. Redpath Hall
33. Morrice Hall
34. Pavillon Stephen Leacock
35. Musée Redpath
36. Pavillon des arts (incl. Moyse Hall)
37. Dawson Hall
38. 840 avenue McGregor



39. Ancienne serre
40. Magasins
41. Pavillon F. Cyril James (administration)
42. Laboratoire de recherches en radiations Foster
43. Laboratoire d'électronique Eaton
44. Pavillon Donner
45. Pavillon d'anatomie et d'art dentaire Strathcona
46. Pavillon William et Henry Birks
47. Wilson Hall
48. Pavillon de génie McConnell
49. Pavillon de génie Macdonald
50. Pavillon de chimie Macdonald
51. Pavillon Frank Dawson Adams
52. Pavillon de physique Macdonald
53. Burnside Hall
54. Institut des pâtes et papiers
55. Pavillon de chimie Otto Maass
56. Strathcona Hall
57. 762 ouest rue Sherbrooke
58. Piscine Garfield Weston
59. Pavillon Strathcona, faculté de musique (incl. salle de concerts Maurice Pollack)
60. Collège Royal Victoria
61. 3521 rue University
62. 522 ouest avenue des Pins
63. 505 ouest avenue des Pins
64. 509 ouest avenue des Pins
65. 515/517 ouest avenue des Pins
66. 527 ouest avenue des Pins
67. Institut de pathologie
68. Douglas Hall
69. Gardner Hall
70. Bishop Mountain Hall
71. Molson Hall
72. McConnell Hall
73. Stade d'hiver McConnell
74. Stade Molson
75. Gymnase Memorial Sir Arthur Currie

DIVISION C *(niveau gradué)*

Les cours de Division C sont réservés aux étudiants gradués qui ne poursuivent pas de Maîtrise à l'Université McGill.

Les étudiants inscrits en Division C sont autorisés à suivre des cours de Division D.

Le programme normal est de quatre cours mais il est permis de suivre un ou deux cours en plus ou en moins. Il est toutefois fortement déconseillé de s'inscrire dans plus de deux cours de littérature par session.

Un cours simple vaut 2 crédits. Un cours double vaut 4 crédits.

N.B. : Les cours de Division C ne font pas partie du programme de Maîtrise. Cependant, les cours suivis en Division D pourront éventuellement être crédités en vue de la Maîtrise si l'étudiant satisfait aux critères d'admission.

Programme des cours en Division C

398-500c. Cours intensif de vocabulaire systématique et expressions usuelles

Cours quotidien de perfectionnement dans la pratique de la langue parlée (cinq heures par semaine).

Séances de conversation par classes de *huit étudiants* environ. Chaque séance se termine par un commentaire des principales difficultés grammaticales et lexicologiques rencontrées au cours de la conservation. *Tests de contrôle hebdomadaires.*

Manuel : J.C. Lemyze, *Par exemple* (Livre II et Dialogues II, Centre Educatif et Culturel, Montréal).

Directeur du cours : Jean-Claude Lemyze

398-501c. Cours intensif de phonétique

Cours quotidien (cinq heures par semaine).

Exposé du système phonologique, des sons et des habitudes articulatoires du français en fonction des difficultés de prononciation que rencontrent les non-francophones. Les étudiants seront assistés de nombreux instructeurs qui travailleront *individuellement* avec eux sous la direction du professeur. En outre, le laboratoire de langues sera à la disposition des étudiants du lundi au vendredi de 9h à 17h. *Des cassettes individuelles seront mises à la disposition des étudiants qui apporteront leur magnétophone.*

Manuel : J.C. Lemyze, *A l'écoute du français* (en vente au Secrétariat de l'Ecole).

Directeur du cours : Jean-Claude Lemyze

398-502c. Grammaire (niveau avancé)

Ce cours s'adresse à des étudiants ayant déjà une assez bonne connaisance de la grammaire française. Exercices variés et courtes traductions.

Manuel : L.F. Hoffman, *L'Essentiel de la grammaire française* et *Travaux Pratiques* (Sribners).

Nelly Courtois

398-503c. Initiation aux problèmes de la dissertation française

Bien loin d'être une simple pratique de rhétorique scolaire, comme on le dit trop souvent, la « Dissertation » constitue en réalité un exercice de discipline intellectuelle qui tend non seulement à développer, chez celui qui le pratique, des qualités de méthode et de composition dans l'exposé, mais encore à mettre en œuvre le sens critique et à favoriser une utilisation judicieuse des connaissances acquises.

Ce cours, évitant le plus possible les considérations générales et abstraites, prendra très largement la forme d'exercices pratiques, à partir d'exemples précis.

Maurice Descotes

398-504c. Introduction à la littérature québécoise

Le repli, l'errance, l'affirmation : tels sont les trois points de repère qui délimiteront le chemin à parcourir pour acquérir une vue d'ensemble de la littérature québécoise.

En plus de procéder à une analyse interne (structures spatio-temporelles et symboliques, thèmes, personnages) permettant d'accéder à un second niveau de lecture (polyvalence d'interprétation, sensibilisation à la fonction symbolique) l'étude des œuvres choisies impliquera une constante « situation » de leurs fondements socio-historiques et idéologiques.

Tout en se rappelant la distance créée par la construction du texte entre le « réel » et le « littéraire », cette introduction à la littérature québécoise se veut donc en même temps une introduction à la société qui se dit en elle.

Pour chacun des trois points de repère énumérés plus haut, il y aura une semaine de présentation et une semaine de travail en séminaire sur l'œuvre retenue. Chaque étudiant aura donc trois préparations de séminaire à faire pour ce cours.

Lectures obligatoires : Ringuet, *Trente arpents* (Coll. Nénuphar, Fides, 1972) ; A. Hébert, *Le torrent*, vol. 1 (Coll. L'Arbre, H.M.H., 1974) (seule la nouvelle *Le torrent* est à l'étude) (p. 7-65) ; J. Godbout, *Salut ! Galarneau* (Seuil, 1967).

Lecture complémentaire (et obligatoire) : L. Mailhot, *La littérature québécoise* (Coll. Que sais-je ?, no 1579, P.U.F., 1974).

Lectures conseillées :

A — **sur l'histoire du Québec**

R. Bilodeau et R. Léger, *Classes sociales et pouvoir politique au Québec : perspective historique* (Leméac, 1974).

B — **sur la société québécoise**

M. Rioux, *Sur l'évolution des idéologies au Québec* (dans *Cahiers de L'Institut de Sociologie*, Université libre de Bruxelles, 1968-1, p. 95-124).

C — **sur la littérature québécoise**

J.C. Falardeau, *Imaginaire social et littérature* (Coll. Reconnaisances, H.M.H., 1974) ; F. Dumont et J.C. Falardeau, *Littérature et société canadienne française* (P.U.L., 1964).

D — **Manuel**

P. de Grandpré, *Histoire de la littérature française du Québec* (4 tomes) (Beauchemin, 1967-1969).

E — **Bibliographie**

J.P. Tremblay, *Bibliographie québécoise* (Educo-média, Ottawa, 1973).

Tout au long de la session, divers textes d'accompagnement à caractère littéraire, historique et socio-culturel pourront être distribués aux étudiants.

Charles Gervais

DIVISION D *(Maîtrise avec ou sans thèse)*

Les cours de Division D sont ouverts à tous les étudiants gradués des Divisions C et D.

Remarque importante : En Division D le professeur prend pour acquis que les étudiants ont déjà lu et connaissent bien les « Textes » et les « Lectures obligatoires » du cours.

En règle générale, il est déconseillé de suivre plus de deux cours de Littérature par session.

Dans la plupart des cours, le travail exigé représente quinze à vingt pages dactylographiées à double interligne.

Programme des cours en Division D

COURS DE LANGUE

398-680c. Dialectologie

Etude des notions de dialecte, patois, langue, etc... Historique de la dialectologie synchronique, diachronique, génétique. Géographie linguistique. Les atlas linguistiques. Les exemples seront choisis dans le domaine gallo-roman d'oïl.

Lectures obligatoires : P. Guiraud, *Patois et dialectes français* (Coll. Que sais-je ?, no 1285) ; Revue *Langue française* (no 18, mai 1973, consacrée aux *Parlers régionaux*).

Documentation : S. Pop, *La dialectologie* (2 vol.) ; L. Remacle, *Syntaxe du parler wallon de la Gleize* (3 vol.).

Emile Seutin

398-681c.
398-682c. Lexicologie française (cours double)

Histoire du lexique français. La lexicologie historique. La lexicologie structurale. La lexicographie. Les dictionnaires français. Situation de la lexicologie par rapport aux grands courants de la linguistique.

Lectures obligatoires : R.L. Wagner, *Les vocabulaires français* (2 vol.); Revue *Langue française* (no 2, *Le lexique*) ; de la Coll. Que sais-je ? : *L'Etymologie* (no 1122), *Les mots étrangers* (no 1166), *La sémantique* (no 655).

Documentation : A. Rey, *La lexicologie ;* J. et C. Dubois, *Introduction à la lexicographie : le dictionnaire ;* Quémada, *Histoire des dictionnaires français.*

Emile Seutin

398-683c. La langue française hors de France

Le français comme langue maternelle. Le français, langue officielle. Le français, langue seconde. Une attention particulière sera accordée aux problèmes du français en Belgique et en Afrique.

Emile Seutin

398-684c. Problèmes linguistiques du français canadien

Phonèmes et variphones du français canadien. Réductions phonétiques et incidences morpho-syntaxiques. Niveaux de langage et sociolinguistique. Travaux pratiques à partir d'un corpus du montréalais.

N.B. : Les étudiants devront avoir suivi antérieurement au moins un cours d'introduction à la linguistique. Ceux qui ont suivi ce cours l'été dernier ne sont pas autorisés à le reprendre.

Laurent Santerre

398-685c. Techniques de la correction phonétique, de la classe de conversation
398-686c. et de l'animation culturelle (cours double)

Stage de pratique et de recherche réservé aux étudiants francophones. Seuls les enseignants sont admis à s'inscrire à ce cours. En raison du nombre très limité de places, les admissions seront sélectives ; les critères retenus seront : 1. une pré-inscription auprès du Secrétariat de l'Ecole dès que possible et au plus tard le 15 juin ; 2. un examen du dossier académique ; 3. un *entretien* avec le professeur responsable au début de la session d'été (le jour des inscriptions). Le professeur réunira les étudiants admis au cours aussitôt après la fin des inscriptions.

Le cours comportera trois parties :

1. *Phonétique corrective*

Cours quotidien (cinq heures par semaine).

Après un cours théorique d'introduction, chaque étudiant sera chargé d'assurer en collaboration avec le profeseur responsable du cours, des séances de phonétique corrective auprès des étudiants non-francophones.

Manuel : J.C. Lemyze, *A l'écoute du français* (en vente au Secrétariat de l'Ecole).

Lectures conseillées : P. Delattre, *Principes de phonétique française* (Middlebury College) ; B. Malmberg, *La phonétique* (Coll. Que sais-je?, P.U.F.) ; H. Sten, *Phonétique française* (Munksgaard).

2. *Techniques de la classe de conversation*

Les étudiants seront chargés d'assurer cinq heures de conversation par semaine dans le cadre des cours de *Vocabulaire systématique et expressions usuelles* (cours 500 et 422) pour non-francophones.

Les étudiants seront assistés dans leur enseignement par le professeur responsable du cours qui visitera les classes de conversation régulièrement.

Manuel : J.C. Lemyze, *Par exemple* (Livre II et Dialogues II) (Centre Educatif et Culturel, Montréal).

Lecture complémentaire (et obligatoire) : P. Burney et R. Damoiseau, *La classe de conversation* (Hachette/Larousse).

3. *Animation culturelle*

Les étudiants agiront comme animateurs culturels dans le cadre du cours 398-427c (Connaissance du Québec) ; cette activité d'animation exigera environ 6 heures par semaine l'après-midi ou le soir.

En plus d'un examen oral portant sur l'ensemble du cours les étudiants devront remettre chaque semaine une transcription phonétique d'une page et, en fin de session, un travail d'analyse en phonétique corrective d'environ 10 pages.

Jean-Claude Lemyze

398-689c. Méthodologie du commentaire des textes littéraires français

Lorsqu'il se trouve amené à commenter un texte littéraire français, l'étudiant (et souvent même le professeur) se trouve généralement fort embarrassé pour déterminer la manière dont il abordera et présentera cette étude de texte. Il n'existe sans doute pas, en cette matière, de « méthode » qui ait valeur de panacée. Il est néanmoins possible d'abord de préciser les difficultés inhérentes à ce genre d'exercices, ensuite de prendre en considération les différents modes de lectures applicables à un texte.

Ce cours aura donc un objectif éminemment pratique. A partir d'un certain nombre d'exemples choisis aussi diversement que possible (dans la littérature française des 19ème et 20ème siècles), il tendra à fournir un éventail de méthodes appropriées aux différents types de textes qui peuvent être soumis à un commentaire.

Des textes ronéotypés seront distribués aux étudiants au début de la session.

Maurice Descotes

431-615c. Didactique instrumentale (cours double)

Revue des principes et des applications de la technologie en usage dans l'enseignement du français langue seconde.

Séances quotidiennes de travaux pratiques sur la préparation, la production et l'évaluation du matériel audio-visuel.

André Morin

Ce cours est offert par la Faculté des Sciences de l'Education de l'Université McGill, Département des Langues Secondes. Il est ouvert aux étudiants de Maîtrise de l'Ecole Française d'Eté.

COURS DE LITTÉRATURE

398-690c. Aux sources de la tradition des moralistes français : Montaigne

La grande tradition des moralistes français n'aurait pas été ce qu'elle est si elle ne s'était alimentée à la source essentielle que constitue l'œuvre de Montaigne. De Pascal à André Gide, en passant par la Rochefoucauld ou la Bruyère, tous ont contracté une dette envers l'auteur des *Essais*. Le livre de Montaigne est si vaste et si riche que l'on sera contraint de ne prendre en considération que quelques chapitres, choisis parmi les plus significatifs : *Que philosopher c'est apprendre à mourir* (I, 20) ; *Apologie de Raymond Sebond* (II, 12) ; *De la physionomie* (III, 12) ; *De l'expérience* (III, 13).

En raison des difficultés que présente l'étude de ce texte dans le domaine de la langue, il est *indispensable que les étudiants en aient pris connaissance avant le début même du cours.*

Texte : Montaigne, *Essais* (obligatoirement : coll. Garnier-Flammarion, 3 volumes).

Lectures conseillées : P. Moreau, *Montaigne l'homme et l'œuvre* (Hatier) ; E. Marcu, *Répertoire des idées de Montaigne* (Droz) ; Plattard, *Montaigne et son temps* (Boivin) ; P. Villey, *Les sources et l'évolution des Essais* (Hachette) ; F. Jeanson, *Montaigne par lui-même* (Seuil) ; A. Thibaudet, *Montaigne* (Gallimard) ; A. Cresson, *Montaigne, sa vie, son œuvre* (P.U.F.) ; Dreano, *La pensée religieuse de Montaigne* (Beauchesne) ; M. Conche, *Montaigne ou la conscience heureuse* (Seghers) ; F. Gray, *Le style de Montaigne* (Nizet).

Maurice Descotes

398-691c. Deux théories politiques avant la Révolution française

Montesquieu, après la lecture des historiens anciens et des récits de voyages, après avoir lui-même voyagé à travers l'Europe, s'efforce de définir les caractères des gouvernements et

les conditions qui leur donnent naissance. Il croit y voir l'action de lois nécessaires et se garde de proposer un modèle valable universellement. Rousseau au contraire, hors de toute réalité concrète, vise à poser les règles d'une politique juste, susceptible d'opérer la réconciliation inimaginable de la liberté et de l'ordre, de l'intérêt personnel et du bien social.

Textes : Montesquieu, *De l'Esprit des lois* (Coll. Idées, Gallimard) ; J.J. Rousseau, *Du Contrat social* (Garnier-Flammarion).

Lectures conseillées : G. Benrekassa, *Montesquieu* (P.U.F.) ; L. Althusser, *Montesquieu : la Politique et l'Histoire* (P.U.F.) ; J. Ehrard, *Politique de Montesquieu* (Colin) ; S. Goyard-Fabre, *La Philosophie du droit de Montesquieu* (Klincksieck) ; M. Launay, *Rousseau* (P.U.F.); R. Derathé, *J.J. Rousseau et la science politique de son temps* (P.U.F.) ; R. Polin, *La Politique de la solitude* (Sirey) ; B. Baczko, *Rousseau. Solitude et communauté* (Mouton).

Roger Mercier

398-692c. Comédie et baroque en France au 17e siècle : Corneille, Molière

Le grand siècle n'est pas seulement le siècle classique, c'est aussi celui du baroque. Théâtre dans le théâtre, la « comédie des comédiens », au moment même du *Discours de la méthode*, montre l'envers du monde des « héros cornéliens ». Et Molière, « moraliste » certes, n'en est pas moins le continuateur sous le Roi Soleil de cette littérature où tout est scène, et où le monde est celui de l'Apparence.

Textes : Corneille, *L'Illusion comique* (éd. scolaire Bordas) ; Molière, *Tartuffe, Dom Juan* (éd. scolaire Bordas).

Lectures conseillées : P. Bénichou, *Morales du grand siècle* (Coll. Idées, Gallimard) ; J. Rousset, *La littérature de l'âge baroque en France* (Corti) ; Ch. Mauron, *Psychocritique du genre comique* (Corti) ; J. Schérer, *La dramaturgie classique en France* (Nizet); O. Nadal, *Le sentiment de l'amour dans l'œuvre de Pierre Corneille* (Gallimard).

Eric Fauquet

398-693c. Beaumarchais, comédie et satire

Avec celui de Marivaux, le répertoire de Beaumarchais demeure le seul qui soit resté vivant de tout le théâtre du 18ème siècle. Il le doit d'abord à sa gaieté franche et efficace qui restitue au genre comique sa véritable vocation. Mais cette gaieté n'est pas inoffensive : avec Beaumarchais le rire n'étouffe pas la réflexion sur des problèmes qui, pour être ceux d'une époque, n'en demeurent pas moins étonnamment modernes. A travers l'étude du *Barbier de Séville* et du *Mariage de Figaro*, on découvrira la richesse et l'actualité d'une œuvre dont la principale caractéristique est sans doute la jeunesse.

On utilisera une bonne édition scolaire (Hachette, Bordas).

Lecture complémentaire (et obligatoire) : *La mère coupable.*

Lectures conseillées : B. Fay, *Beaumarchais* (Perrin) ; R. Pomeau, *Beaumarchais, l'homme et l'œuvre* (Hatier) ; J. Schérer, *La dramaturgie de Beaumarchais* (Nizet) ; Ph. van Thieghem, *Beaumarchais par lui-même* (Seuil) ; M. Descotes, *Les grands rôles du théâtre de Beaumarchais* (P.U.F.).

Maurice Descotes

398-694c. Diderot critique de la fonction de l'intellectuel au 18e siècle

Selon Voltaire, l'homme de lettres, aussi nécessaire que le négociant au progrès, a sa place aux sommets de la hiérarchie sociale. Selon Rousseau, le législateur a été et sera le père de la nation. Le maître d'œuvre de l'*Encyclopédie*, Diderot, tout en développant une théorie du « génie, homme pour l'avenir », reconnaît mieux, en lui-même et dans ses œuvres secrètes écrites pour lui-même et non pour le public de son temps, les limites et les servitudes de l'intellectuel d'Ancien Régime, « domestique » et familier des Grands. Problèmes d'esthétique, de morale et de philosophie sont examinés à la lumière de la réalité véritable du temps. Sans doute est-ce pour cela que *le Neveu de Rameau*, par exemple, révélé par Gœthe, a été pour Hegel un exemple brillant de la dialectique, cent cinquante ans avant d'être un « grand texte » pour l'Université et pour la critique dans son pays.

Texte : Le neveu de Rameau (Présenté par R. Desné, Ed. Sociales ou éd. J. Fabre, Droz, Genève, 1950).

Lecture obligatoire : J. Proust, *Lectures de Diderot* (Coll. U2, Colin, 1974).

Lectures conseillées : Launay et Duchet, *Entretiens sur le neveu de Rameau* (Nizet, 1967) ; Y. Benot, *Diderot, de l'athéisme à l'anticolonialisme* (Maspero, 1970) ; D. Couty, *Le neveu de Rameau* (Coll. Profil d'une œuvre, Hatier, 1972) ; Les œuvres de Diderot et plus particulièrement : *Oeuvres philosophiques* (Garnier, 1967) et *Textes politiques* (présentés par Y. Benot, Ed. Sociales, 1971).

Eric Fauquet

398-695c. L'autobiographie

Née avec les *Confessions* de Jean-Jacques Rousseau, l'autobiographie est devenue un genre de plus en plus proliférant. Il n'est pas aujourd'hui d'écrivain qui ne tienne un journal ou qui n'écrive ses mémoires, et qui ne cherche, en les publiant de son vivant, à imposer à ses contemporains et à la postérité l'image qu'il désire qu'on se fasse de lui. On examinera le pacte autobiographique et les modalités de son application par trois écrivains.

Textes : J.J. Rousseau, *Confessions* (tome I) (Garnier-Flammarion) ; Stendhal, *Vie de Henry Brulard* (Folio) ; Gide, *Si le grain ne meurt* (Folio).

Lectures conseillées : P. Lejeune, *L'Autobiographie en France* (Colin) ; B. Munteano, *Solitude et contradictions de J.J. Rousseau* (Nizet); J. Starobinski, *J.J. Rousseau. La transparence*

et l'obstacle (Gallimard) ; A. Caraccio, *Stendhal* (Hatier) ; G. Blin, *Stendhal et les problèmes de la personnalité. Stendhal et les problèmes du roman* (José Corti) ; J. Delay, *La jeunesse d'André Gide* (2 vol.) (Gallimard) ; M. Raimond, *Les critiques de notre temps et Gide* (Garnier).

Roger Mercier

398-696c. André Breton

Parmi les tentatives poétiques du 20ème siècle, le surréalisme reste la plus prestigieuse, et André Breton en est la figure dominante. A côté de son œuvre de réflexion critique, ses poèmes et le récit de *Nadja* ont contribué à la libération de l'écrivain aussi bien à l'égard des tabous de la raison que des règles de l'écriture respectées, malgré les révolutions du goût, des classiques aux symbolistes.

Textes : Clair de terre, Signe ascendant (Coll. Poésie, Gallimard) ; *Nadja* (Folio).

Lectures conseillées : A. Breton, *Manifestes du surréalisme* (Coll. Idées, Gallimard) ; G. Durozoi et B. Lecherbonnier, *Le surréalisme* (Hatier) ; J. Monnerot, *La poésie moderne et le sacré* (Gallimard) ; J. Gracq, *André Breton* (Corti) ; Ph. Audoin, *André Breton* (Gallimard).

Roger Mercier

398-697c. Aimé Césaire

Poète influencé par le surréalisme, auteur dramatique tirant son inspiration de l'actualité politique ou adaptant d'anciens thèmes aux situations contemporaines, homme politique engagé dans la lutte contre toutes les formes d'oppression, Aimé Césaire est l'un des écrivains noirs francophones dont l'œuvre a marqué le plus profondément notre temps.

Textes : Cahier d'un retour au pays natal, La tragédie du roi Christophe (Présence Africaine/Poche) ; *Une tempête* (Seuil).

Lectures conseillées : L. Kesteloot, *Les écrivains noirs de langue française. Naissance d'une littérature* (Université libre de Bruxelles) ; L. Kesteloot, *Aimé Césaire* (Seghers) ; L. Kesteloot et B. Kotchy, *Aimé Césaire* (Présence Africaine) ; R.E. Harris, *L'Humanisme dans le théâtre d'Aimé Césaire* (Sherbrooke, Naaman).

Roger Mercier

398-698c. Les romanciers français en face de la guerre de 1914-1918

Toute guerre constitue le type de l'événement historique qui engage directement les individus et bouleverse les destins personnels. Elle ne saurait donc manquer de solliciter l'imagination et la réflexion de l'écrivain. Qu'il ait été acteur dans cet événement ou qu'il en ait été seulement le témoin, le romancier s'applique, à travers des personnages plus ou moins fictifs, à rendre compte de ces bouleversements, à les mesurer et à les expliquer.

A travers le foisonnement des romans qui ont été consacrés à la guerre de 1914-1918, on prendra particulièrement en considération les œuvres suivantes, pour faire ressortir la diversité des points de vue et des leçons tirées : *Le feu* d'Henri Barbusse ; *Les croix de bois* de Roland Dorgelès ; *Civilisation* (ou *La vie des martyrs*) de Georges Duhamel ; *Le diable au corps* de Raymond Radiguet ; *L'Eté de 1914* dans *Les Thibault* de Roger Martin du Gard ; *L'Equipage* de Joseph Kessel ; *Prélude à Verdun* et *Verdun* dans *Les hommes de bonne volonté* de Jules Romains ; *Les silences du Colonel Bramble* d'André Maurois.

Parmi ces œuvres, l'étudiant devra obligatoirement, *avant le début du cours*, avoir pris une connaissance directe et approfondie de *deux* romans, à son choix.

Ce cours peut compter au choix pour un cours de Littérature ou de Civilisation.

Maurice Descotes

398-699c. Apollinaire « mainteneur et novateur »

Avant le surréalisme dont il annonce quelques-unes des techniques sans en pratiquer les exclusives dépourvues d'humour, Apollinaire, curieux de toute la tradition poétique française, l'oublie pour mieux trouver autre chose. Il fonde ainsi, à défaut d'une école, la poésie moderne. Si l'étude critique de son œuvre est encore affaire de spécialistes, le rayonnement de sa poésie est désormais universel malgré la spécificité et la diversité de ses moyens.

Texte : Alcools (Coll. Poésie, Gallimard).
Lectures obligatoires : Les critiques de notre temps et Apollinaire (Garnier, 1971) ; Bégué-Lartigue, *Alcools* (Coll. Profil d'une œuvre, Hatier).

Lectures conseillées : Ph. Renaud, *Lecture d'Apollinaire* (Ed. L'Age d'Homme, Lausanne); J.C. Chevalier, *Alcools, analyse des formes poétiques* (Minard, 1970) ; M.J. Durry, *G. Apollinaire : Alcools* (SEDES, 3 tomes).

Eric Fauquet

398-700c. Les essayistes québécois de 1945 à nos jours

« Après tant de silences et de balbutiements, il est au moins un devoir certain : celui de dire ». (F. Dumont, *La vigile du Québec*).

Identifier le développement de cet âge de la parole, en saisir le rythme et les modulations, en comprendre les silences comme les cris, en cerner la portée réelle et son avenir incertain.

Tout en dégageant les principales articulations de cette « petite histoire de nos sentiments », ce cours/séminaire sera principalement axé sur l'étude de *manifestes (Refus global, Les insolences du Frère Untel, Le mouvement laïque de langue française, Parti pris, F.L.Q., L'Infonie, Manuel de la C.E.Q., ...)* et *revues (Cité libre, Liberté, Maintenant, Parti pris, Mainmise, ...)* qui ont marqué des étapes importantes dans le déroulement de cette histoire.

Chaque étudiant aura deux préparations de séminaires à faire comme travail ainsi que la rédaction d'un court essai sur un sujet de son choix.

Les textes à travailler seront distribués au début de la session.

Lectures conseillées : F. Dumont, *La vigile du Québec, octobre 1970 : l'impasse ?* (H.M.H., 1971) (particulièrement les p. 21 à 103) ; P. de Grandpré, *Histoire de la littérature française du Québec* (Beauchemin, 1969, tome IV, chap. VII, p. 265 à 340).

Charles Gervais

398-702c. Michelet historien du peuple

Ce cours figure à la section des cours de Civilisation et peut compter au choix pour un cours de Littérature ou de Civilisation.

Eric Fauquet

COURS DE CIVILISATION

398-701c. L'Afrique Noire d'après les indépendances

Après s'être longtemps bornée à dépeindre l'ère coloniale, la littérature négro-africaine d'expression française commence à se faire l'écho des problèmes de la vie actuelle. On s'efforcera, en partant de quelques textes et en les confrontant avec la réalité politique, de faire un peu de lumière sur le présent du continent africain et ses perspectives d'avenir.

Textes : A. Kourouma, *Les soleils des indépendances* (Seuil) ; G. Sembene, *Xala* (Présence Africaine) ; M. Beti, *Perpétue* (Buchet/Chastel).

Lectures conseillées : R. et M. Cornevin, *Histoire de l'Afrique contemporaine de la deuxième guerre mondiale à nos jours* (Petite Bibliothèque Payot) ; R. Dumont, *L'Afrique Noire est mal partie* (Seuil) ; M. Beti, *Main basse sur le Cameroun* (Maspero).

Roger Mercier

398-702c. Michelet historien du peuple

Michelet est enfin appelé à être redécouvert comme un des grands romantiques. Il l'est par l'engagement de tout son être dans son œuvre et par sa recherche passionnée d'une foi. Ce qu'on ne reproche plus aujourd'hui à un historien... Historien des sociétés et des « mentalités » par sa description des classes sociales de son temps et de leurs aliénations, il a été et demeure l'historien de la France. Parce qu'une idée le guidait : la France après 1789, sous peine de mourir, doit être celle de l'association, pour parler comme les socialistes, et créée par une éducation continue « harmonique », inspirée des valeurs de l'« instinct populaire ». Utopie égale en puissance à d'autres de son temps, puisque les politiques en ont ensuite appliqué des idées, le *Peuple* de Michelet a ce charme littéraire propre aux utopies, où s'engage pourtant toute une vision du monde.

Lectures obligatoires : Le peuple (Didier) ; une Histoire de France de 1800 à 1848 ; un Manuel d'Histoire des idées politiques, sur les socialistes français d'avant 1848.

Lectures conseillées : Autres œuvres de Michelet, particulièrement : *Journal, Oeuvres de jeunesse, Préface de l'Histoire de la Révolution* (Gallimard), *Nos fils, Le banquet ;* P. Vialaneix, *La voie royale, essai sur l'idée de peuple dans l'œuvre de Michelet* (Flammarion) ; R. Barthes, *Michelet par lui-même* (Seuil) ; J. Goret, *La pensée de Fourier* (P.U.F.) ; Proudh'on, *Oeuvres choisies* (Coll. Idées, Gallimard).

Ce cours peut compter au choix pour un cours de Civilisation ou de Littérature.

Eric Fauquet

398-703c. La société québécoise à la recherche de son identité : de la dépossession à l'expression

Après avoir questionné le sens de « dépossession » et « d'expression », il s'agira de « pratiquer » ces concepts sur une des dimensions suivantes de la réalité québécoise : nationalisme, travail, sexualité, couple, famille, morale, religion, langue, école.

En plus d'un travail d'analyse sur la dimension qu'il aura retenue, chaque étudiant devra, à l'aide d'un moyen d'expression de son choix, essayer lui-même de traduire une expérience de dépossession vécue personnellement ou par d'autres dans son propre milieu de vie.

Par le biais de cette approche, à la fois théorique et pratique, ce cours cherche donc avant tout à permettre à l'étudiant de comprendre *de l'intérieur* ce que représente pour une collectivité comme pour un individu la quête d'une identité.

Une bibliographie sélective concernant chacune des dimensions proposées sera distribuée au début de la session. Les productions des étudiants pourront elles-mêmes servir comme documents de travail.

Charles Gervais

398-704c. Le pays et ses saisons dans la culture québécoise

Etudier la structure spatio-temporelle de la culture québécoise par le biais d'une analyse à la fois symbolique et socio-culturelle du pays et de ses saisons. Cette approche vise donc à comprendre le vécu du Québécois à travers son rapport à l'espace-pays et au temps-saisons.

Le pays et ses saisons : leur signification, leur symbolique, leur importance, par l'étude de leurs diverses représentations dans la culture québécoise.

Ce cours/recherche se fera à l'aide d'un éventail le plus large possible d'instruments de travail (à trouver tant par les étudiants que par le professeur). Chaque étudiant aura deux travaux pour ce cours : l'un, sur le thème du pays, l'autre, sur une saison. La forme de ces travaux sera à préciser avec le professeur.

Charles Gervais

398-698c. Les romanciers français en face de la guerre de 1914-1918

Ce cours figure à la section des cours de Littérature et peut compter au choix pour un cours de Littérature ou de Civilisation.

Maurice Descotes

RÉGLEMENTATION DE LA MAÎTRISE DIVISION D

Les études en vue de la Maîtrise en français à l'Ecole Française d'Eté s'effectuent sous la responsabilité de la Faculté des Etudes Avancées de l'Université McGill en coordination avec le Département de Langue et Littérature Françaises.

MAÎTRISE SANS THÈSE

La scolarité totale est de 24 cours pour les étudiants admis à la session préliminaire (Da) et de 20 cours pour les étudiants admis en première année de Maîtrise (D1). Cette scolarité s'accomplit en 4, 5 ou 6 sesions d'été, selon les modalités précisées plus bas ; elle équivaut à deux années de scolarité à temps plein.

MAÎTRISE AVEC THÈSE

Les étudiants désireux de faire une Maîtrise avec thèse peuvent accomplir leur scolarité à l'Ecole Française d'Eté avant de s'inscrire au Département de Langue et Littérature Françaises de l'Université McGill. Cette scolarité s'accomplit en 3 ou 4 sessions et comporte 12 ou 16 cours selon que l'étudiant est admis en D1 ou en Da.

Les deux Maîtrises (sans thèse et avec thèse) sont strictement équivalentes sur le plan académique et confèrent à leurs titulaires rigoureusement les mêmes droits. Toutefois, les étudiants qui envisagent de poursuivre des études de Doctorat au Département de Langue et Littérature Françaises de l'Université McGill devront obtenir une Maîtrise avec thèse.

Le choix entre la Maîtrise sans thèse ou avec thèse peut se faire en tout temps après la troisième année (D3).

CONDITIONS D'ADMISSION

Les admissions sont prononcées après examen des dossiers par le Comité d'admission. Les étudiants titulaires d'un B.A. Honours en français de l'Université McGill, d'un diplôme équivalent d'une autre Université, d'une Licence ou d'un Baccalauréat Spécialisé avec une concentration équivalente en français et des notes jugées satisfaisantes, sont admis directement en 1ère année de Maîtrise (D1), après examen de leur dossier.

Les étudiants titulaires d'un B.A. ou d'un diplôme équivalent et qui ne répondraient pas aux conditions précédentes pourront être admis à suivre une session préliminaire (Da).

RÉGIME DES ÉTUDES

Une session d'été comporte normalement quatre cours. A partir de D2, les étudiants pourront suivre cinq cours s'ils ont obtenu une moyenne de 77% calculée sur leurs quatre meilleurs résultats à la session précédente. Les étudiants admis en D1 de même que ceux qui ne répondraient pas à cette exigence de moyenne ne seront autorisés à suivre cinq cours par session qu'après examen de leur dossier.

L'attention des étudiants est cependant attirée sur le fait que suivre cinq cours par session constitue une scolarité lourde et que quatre cours doivent être considérés comme la norme.

Les étudiants de Maîtrise de l'Ecole Française d'Eté sont admis à la Faculté des Etudes Avancées dès la première année (Da ou D1). Ils sont autorisés à suivre au Département de Langue et Littérature Françaises de l'Université McGill l'équivalent de 6 cours d'été, c'est-à-dire 2 cours d'année entière.

Les étudiants désireux de se prévaloir de cette disposition doivent choisir leurs cours en fonction des exigences de la Maîtrise et demander au Directeur de l'Ecole une autorisation écrite dans les premiers jours de septembre.

Tout au long de leur scolarité de Maîtrise les étudiants doivent se réinscrire à l'Ecole chaque année.

Echecs : toute note inférieure à B (65%) constitue un échec. Trois échecs au cours de la scolarité de Maîtrise entraînent l'élimination après examen du dossier.

SCOLARITÉ DE LA MAÎTRISE

SESSION PRÉLIMINAIRE (Da)

Les cours sont les mêmes que ceux des autres sessions.

Les étudiants doivent suivre 4 cours dont :
- un cours de Langue
- un cours de Littérature française
- un cours de Littérature québécoise
- un cours de Civilisation

N.B. : Les étudiants non-francophones devront satisfaire à un examen portant sur leur connaissance du français écrit et oral. Ce test sera administré en cours de la 1ère session et, en cas de résultats insuffisants, des cours de langue supplémentaires pourront être imposés.

MAÎTRISE SANS THÈSE

Les étudiants ayant accompli leur session préliminaire ou admis directement en 1ère année (D1) doivent suivre 20 cours de Division D en 4 ou 5 sessions :

- 5 cours de Langue
- 6 cours de Littérature, dont :
  - 1 cours de Littérature du Moyen-Age ou du 16ème s.
  - 1 cours de Littérature du 17ème s.
  - 1 cours de Littérature du 18ème s.
  - 1 cours de Littérature du 19ème s.
  - 1 cours de Littérature québécoise du 20ème s.
  - 1 cours de Littérature française du 20ème s.
- 2 cours de Civilisation
- 7 cours au choix

MAÎTRISE AVEC THÈSE

Les étudiants ayant accompli leur session préliminaire, ou admis directement en 1ère année (D1) doivent suivre 12 cours de Division D en 3 sessions :

3 cours de Langue
6 cours de Littérature (même répartition que pour la Maîtrise sans thèse)
1 cours de Civilisation
2 cours au choix

Après qu'il a suivi les 12 cours requis à l'Ecole Française d'Eté l'étudiant qui veut obtenir une Maîtrise avec thèse doit demander le transfert de son dossier au Département de Langue et Littérature Françaises. Il devient dès lors membre du Département et s'inscrit en M.A. II. Il doit alors suivre un demi-cours (de niveau 600) au Département, se choisir un Directeur de thèse, faire approuver son sujet de thèse par la Direction des Etudes Graduées du Département et rédiger sa thèse d'après les exigences du Département.

ANNÉES DE SCOLARITÉ

La Maîtrise en français accomplie à temps partiel en plusieurs sessions à l'Ecole Française d'Eté et terminée au complet (24 cours) est officiellement reconnue par le Ministère de l'Education du Québec comme équivalente à deux années de scolarité à temps plein. 12 cours de maîtrise suivis et réussis à l'Ecole Française d'Eté sont officiellement reconnus pour une année de scolarité à temps plein.

FRAIS DE SCOLARITÉ

Les étudiants doivent acquitter tous les frais de scolarité (Tuition Fees) à chacune des sessions d'été auxquelles ils s'inscrivent. En D5 (et éventuellement en D6), les étudiants bénéficient d'un tarif réduit (voir Tuition Fees and Residence Charges, p. 6).

EMPLOI DU TEMPS

Division B

Horaire	LUNDI – MERCREDI – VENDREDI	Horaire	MARDI – JEUDI
9.00 à 10.00	424 **Grammaire** 428 **Poésie québécoise**	9.00 à 10.30	426 **Stylistique** 432 **Cinéma français**
10.00 à 11.00	425 **Composition** 429 **Civilisation québécoise**	10.30 à 12.00	431 **Explication de textes** 433 **Cinéma québécois**
11.00 à 12.00	422 **Vocabulaire** (cours quotidien)		
12.00 à 1.00	423 **Phonétique** (cours quotidien)		

427 **Connaissance du Québec :** les activités auront lieu l'après-midi et le soir.

430 **Du roman à l'écran :** le cours sera donné au Collège Royal Victoria le vendredi de 2h. à 5h.

434 **Théâtre en action :** les séances auront lieu l'après-midi et le soir et l'horaire sera fixé au début de la session.

N.B. Les cours commencent cinq minutes après l'heure et se terminent cinq minutes avant.

EMPLOI DU TEMPS

Divisions C et D

Horaire	LUNDI – MERCREDI – VENDREDI	Horaire	MARDI – JEUDI
9.00 à 10.00	680 **Dialectologie** 690 **Montaigne** 695 **Autobiographie** 699 **Apollinaire** 703 **Société québécoise**	9.00 à 10.30	503 **Dissertation** 504 **Littérature québécoise** 701 **Afrique noire** 694 **Diderot**
10.00 à 11.00	691 **Montesquieu et Rousseau** 692 **Corneille et Molière** 698 **Romanciers français** 700 **Essayistes québécois**	10.30 à 12.00	502 **Grammaire** 683 **Français hors de France** 702 **Michelet** 704 **Pays et saisons**
10.00 à 12.00	681-682 **Lexicologie**		
11.00 à 12.00	684 **Français canadien** 693 **Beaumarchais** 696 **A. Breton**		
12.00 à 1.00	689 **Méthodologie** 697 **A. Césaire**		
11.00 à 12.00	500 **Vocabulaire** (cours quotidien)		
11.00 à 1.00	685-686 **Techniques** (cours quotidien)		
12.00 à 1.00	501 **Phonétique** (cours quotidien)		
	431-615c **Didactique** Le cours aura lieu l'après-midi et l'horaire sera fixé au début de la session.		

N.B. Les cours commencent cinq minutes après l'heure et se terminent cinq minutes avant.

LITHO IMPRIMERIE JACQUES-CARTIER INC.

IMPRIMÉ AU CANADA

School of

NURSING

1976/77

McGill University
Montreal

The University reserves the right to make changes without prior notice to the information contained in this publication, including the alteration of various fees schedules and the revision or cancellation of particular courses.

Students intending to seek membership in a professional corporation in Quebec are reminded that after July 1, 1976 they will be required to show that they possess a working knowledge of the French language, in conformity with the requirements of the Professional Code (Bill 250) and the Official Language Act (Bill 22).

School of
NURSING
in the Faculty of Medicine

1976 — 77

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1 STAFF

1.1 ADMINISTRATIVE OFFICERS

ROBERT E. BELL, C.C., B.A., M.A.(U.B.C.), Ph.D.(McG.), D.Sc.(U.N.B., Laval), LL.D.(Tor.), F.R.S., F.R.S.C.
Principal and Vice-Chancellor

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Vice-Principal (Administration)

ALLAN C. McCOLL, D.F.C., B.Com.(McG.), C.A.
Vice-Principal (Finance)

WALTER F. HITSCHFELD, B.A.Sc.(Tor.), Ph.D.(McG.), F.R.Met.S.
Vice-Principal (Research)

COLIN M. McDOUGALL, D.S.O., B.A.(McG.)
Secretary-General

JEAN-PAUL SCHULLER, B.A.(Ott.) **Registrar**

PEGGY SHEPPARD, B.Ed.(McG.), B.A.(Sir G. Wms.) **Director of Admissions Office**

R. F. PATRICK CRONIN, M.D., C.M., M.Sc.(McG.), F.R.C.P.(Lond.), F.R.C.P.(C)
Dean of the Faculty of Medicine

JOAN M. GILCHRIST, B.N., M.Sc.(Appl.)(McG.), R.N. **Director of the School of Nursing**

1.2 STAFF OF THE SCHOOL OF NURSING

JOAN M. GILCHRIST, B.N., M.Sc.(Appl.)(McG.), R.N.
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RAJA G. DIRLIK (Mrs. A.), B.A.(American U. of Beirut), B.L.S., M.L.S.(McG.) **Librarian**

OTHER OFFICERS OF INSTRUCTION IN THE SCHOOL

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Director of Nursing, Royal Victoria Hospital

FLORENCE FARMER, B.H.S., M.Sc., Ph.D.(McG.)
Associate Professor of Food Science

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Director of Nursing
Montreal General Hospital

ROSELYN SMITH, B.N.(McG.), R.N.
Director of Nursing
Montreal Children's Hospital

2 GENERAL INFORMATION

2.1 THE SCHOOL

Since its beginning in 1920, the School of Nursing has grown in its continued effort to educate nurses who will improve the quality of nursing, in whatever area they may practise. With the growing complexity of medical care, and the rapid growth of scientific knowledge, the nursing profession needs educated, thoughtful practitioners who can assess nursing problems and develop new ways of solving them.

The School has four programs:

(1) A baccalaureate program for registered nurses which is terminating 1976-77.
(2) A basic baccalaureate program for holders of a collegial diploma in Health Sciences.
(3) A program leading to a Master of Science (Applied) degree for nurses holding a baccalaureate degree and for non-nurses holding a baccalaureate degree comparable to a B.Sc. or B.A. program offered at McGill.
(4) A program leading to a Master of Nursing (Teaching) degree for nurses holding a basic baccalaureate degree.

The School is administered in the Faculty of Medicine and is located in Wilson Hall, which houses classrooms, faculty offices, a professional library, and lounges. Students registered in the School also take courses in other Faculties within the University. Selected field experience in nursing is provided in the McGill Teaching Hospitals, and in a wide variety of health and social agencies in Montreal. Specific programs of study are outlined in the relevant section of this Announcement.

2.2 HEALTH SERVICES

All new students must have proof of a valid smallpox vaccination and must have a health interview and chest x-ray after registration. Health Service is provided for all students during the session. (See *Students' Information Pamphlet* available from the School.)

COMPULSORY HEALTH INSURANCE FOR NON-CANADIAN STUDENTS

All full-time foreign students (including landed immigrants during their first year at McGill) must take out a Health Insurance policy, which is available on a group basis. In general, the policy provides for payments towards hospital, surgical, medical, diagnostic and other medical expenses.

2.3 FEES

REGULATIONS FOR PAYMENT OF FEES

New Students

Students entering the University for the first time and those returning in Graduate Studies are required to pay their fees by mail or in person at the Accounting Office within 10 days after registration. For students registering in September the second instalment is due before January 15, 1977.

A late payment fee of $10.00 for the first 30 days, $25.00 thereafter, is charged for payment after the specified dates.

Returning Students

Returning students from the previous year (except in Graduate Studies) must pay one half of the total required fee by mail or in person to the Accounting Office before August 23, 1976, otherwise they will not be permitted to register. Instructions for paying fees in advance will be mailed to all returning students, either with their Sessional Reports of Standing or a short time later. Students who have been notified by the University of the award of a scholarship, bursary or student loan, and who require this award for payment of the first instalment of fees, must obtain permission to delay payment of fees from the Student Aid Office.

The second instalment is due January 15, 1977. A late payment fee of $10.00 for the first 30 days; $25.00 thereafter is charged for payment after the specified dates.

LATE REGISTRATION

Students registering late must pay their fees at the time of registration, failing which they become subject to the late payment fee and the provisions of the following paragraph:

As soon as possible after the prescribed dates for the payment of fees the Chief Accountant

will send to the Registrar's Office a list of the registered students who have not paid their fees. Reports of Standing, transcripts of records and diplomas will be withheld until such time as the fees are paid or a satisfactory arrangement is made with the Chief Accountant.

Further information concerning fees is contained in the *General Announcement* available from the Registrar's Office.

HOUSING AND RESIDENCE FACILITIES

Operating year-round, the Off-Campus Housing Service, 3465 Peel Street (392-4554), offers assistance to those seeking lodging. Early application is desirable. For an unfurnished bachelor apartment expect to pay between $140.00 — $200.00 monthly.

There is limited room space available in university residences; again the earliest application possible is recommended. Further information is contained in the Residential Facilities section of the *General Announcement* which is available from the Registrar's Office.

2.4 SCHOLARSHIPS, BURSARIES AND PRIZES

There are a number of entrance scholarships open to students from all parts of Canada registering in the University. Information may be obtained from the Admissions Office. Additional information is available in the *Undergraduate Scholarships and Awards Announcement* which can be obtained from the Registrar's Office.

The *Postgraduate Awards, Fellowships and Bursaries Announcement* for students at the graduate level is also available from the Registrar's Office.

2.5 STUDENT SERVICES

Information concerning the various student services available is contained in Section 6 of the *General Announcement* which may be obtained from the Registrar's Office.

2.6 REGISTRATION

Registration for *all* B.N. and B.Sc. (N.) students will be held on Wednesday, September 8. Students must first report on that date for preliminary registration between the hours of 9 a.m. and 4 p.m., following which their registrations will be completed in the Sir Arthur Currie Memorial Gymnasium.

Preliminary enrolment for students in the *final year* of the Bachelor of Nursing Program will be held prior to registration during the period Wednesday, September 1 through Tuesday, September 7 (Labour Day excepted) in Wilson Hall.

N.B. Registration information for students in the Master's Program will be provided by the School directly to the applicant.

2.7 EXAMINATIONS

Final examinations are generally held for first-term half courses in January, and for full courses and second-term half courses in April and May. Mid-term examinations for full courses may be held in December depending upon the instructor.

Course grades are converted to letter grades as follows: A (80-100%), B (65-79%), C (55-64%), D (45-54%), F (0-44%). For students in the B.N. and B.Sc.(N).) programs, the pass mark is a C. In the Master's programs the pass mark is a B, except for Nursing courses which are graded on a pass-fail basis.

A student who has failed in a final examination and has been given permission by the Director of the School to write a supplemental examination must write this supplemental during the following August. Written application must be made before August 1. A fee of $10.00 for each supplemental paper is payable to the Cashier as soon as the application has been approved. A student who wishes to write a supplemental examination outside McGill must make application to the Director to do so before July 15. There is an additional fee of $10.00 for establishing such an outside centre.

3 BACHELOR OF NURSING PROGRAM

3.1 GENERAL INFORMATION

This program for Graduate Nurses is being discontinued, and only those students who have completed the first year of the program will be admitted to the second year in September 1976. Students who have been permitted to take the program over three years must complete all nursing courses in the 1976-77 academic year and complete required courses in other faculties by May 1978.

Following completion of the baccalaureate program, internships of 2-4 months are planned for selected students to prepare for nursing practice in primary health care or as nurse specialists in clinical fields.

FINAL YEAR

The study of Nursing in the second year relates to:

a) Teaching of Nursing
b) Supervision of Nursing Services

Students in this final year are required to complete a month of field experience during May. This experience is related to the particular course, as well as to the needs of individual students.

APPLICATION FOR ADMISSION

Applicants who have completed the first year of the program may obtain a form from the Admissions Office or the School of Nursing to apply for the second year.

EXPENSES

Approximate cost for one year:

Tuition fees	$570.00
Student Services and Societies fees	$102.50
Books & incidentals	$125.00
Room & Board	$1,800.00 to $2,300.00

Field work will involve additional expense for travel and living which the student must consider in estimating expenses. Further expense should be anticipated by students who do an internship.

3.2 COURSE OF STUDY

FINAL YEAR

Core Courses

Nursing 570-410D. Introduction to Study Methods
Education 413-404A or 405A or 406B or 408B
Sociology (selected course)
Political Science 160-211D or 231D or 244A and 245B or 247B.
Management 279-294A (Industrial Relations)
Management 280-222B.

Electives

Elective from the Faculties of Arts or Science as well as one of the following:

Nursing 570-450D. Supervision of Public Health Nursing
or
Nursing 570-460D. Teaching of Nursing.
or
Nursing 570-470D. Supervision of Nursing in Hospitals.

3.3 DESCRIPTION OF COURSES

Nursing

570-410D INTRODUCTION TO STUDY METHOD. The use of research method in the study of nursing problems. (One hour and laboratory, two terms.)
Mrs. Reidy

570-450D SUPERVISION OF PUBLIC HEALTH NURSING. The supervisory process is studied as it relates to problem-solving in community nursing. The educative, developmental and administrative aspects of the supervisory role are included. Principles of epidemiology are applied to the study of a community problem. (Two hours, two terms, clinical experience in May is required.)
Mrs. Davis

570-460D TEACHING OF NURSING. A consideration of the relation between the process of learning nursing and the selection of teaching strategies and the development of a structure for learning. (Two hours, two terms; clinical experience in May is required.)
Professor Doyle

570-470D SUPERVISION OF NURSING IN HOSPITALS. The supervisory process is studied as it relates to problem-solving in nursing in hospitals. The educative, developmental and administrative aspects of the supervisory role are included. Role playing and interviewing techniques are emphasized. (Two hours, two terms; clinical experience in May is required.)
Professor Besel

COURSES GIVEN IN OTHER FACULTIES

Students have an opportunity to select courses from those offered in the Faculties of Arts. Science and Education as outlined in the various programs.

4 BACHELOR OF SCIENCE IN NURSING PROGRAM

4.1 GENERAL INFORMATION

HEALTH REQUIREMENTS

In addition to requirements listed in Section 2.2, students must have proof of inoculations for tetanus, poliomyelitis, typhoid, paratyphoid, and diphtheria. Arrangements will be made after registration for chest x-rays and tuberculosis sensitivity testing.

EXPENSES

Bachelor of Science in Nursing tuition and student fees (based on 30 credits at $19.00 per credit):

Tuition fees	$570
Student Services and Societies fees	$103
Room and Board (Sept. — April)	$1638 — $1820
Transportation (3rd yr.)	$100

N.B. Some of the credits in this program will be taken in the summer and the fees will be assessed and payable at that time.

UNIFORMS

Students are required to supply themselves with the school uniform obtained through the School. A plain dark coat is required for community nursing.

4.2 PROGRAM

The prerequisite is two pre-university years in the Biological (Health) Sciences in a General and Voca-

tional College (CEGEP) or the equivalent in any university. Students are urged to select their options from introductory and advanced courses in Psychology and Sociology.

The curriculum extends over three years with general and professional courses in each year. There is a nursing course in May and June of the first two years. Experience will be concentrated in the community health centres, and experience in hospitals and other agencies will be closely linked to the home and community.

Each nursing course serves as a prerequisite for the following one. They are listed in sequence according to number and letter. The student must successfully complete each course before proceeding. Each course is assigned a credit rating reflecting the amount of effort it demands of the student.

Graduates of the diploma program in nursing in the General and Vocational College (CEGEP) can enter this program after they have obtained the prerequisite courses in the biological (health) sciences.

4.3 COURSE OF STUDY

FIRST YEAR

Physiology 552-201A and 202B
Biology 177-201D
Psychology 204-304D
Sociology 166-210A
Selected B course from Arts or Science
Nursing 572-200D, 572-210D, 572-201L

SECOND YEAR

Pathology 546-300A
Microbiology 528-311A
Psychology 204-304D
Nursing 572-300D, 572-301L

THIRD YEAR

Biology 177-202B
Social Psychology 204-330A, 204-331B
Selected A course from Arts or Science
Nursing 572-400A, 572-401B

4.4 DESCRIPTION OF COURSES

572-200D. A study of health and illness in individuals of varying ages with emphasis on the beginning development of sensitivity to patient needs through observation and the use of interpersonal skills. The process of assessment will be facilitated by the derivation of nursing knowledge from contact with patients who have an acute illness or are in the acute phase of illness. These data will be linked to knowledge acquired concurrently from the Biological and Social Sciences and used to provide care for patients in hospital and at home. (2 hours class; 8 hours experience weekly—2 terms) 6 credits.

572-201L. A concentrated period within the hospital will provide an opportunity for the student to acquire skill in a core of nursing techniques particularly related to the patient who is undergoing surgery. (May and June — 10 hours and 20 hours experience weekly) 8 credits.

572-300D. The study of the response of the individual and his family to chronic illness including the various factors affecting the response. The student learns how to nurse individuals and help them adjust to their life situations. (2 hours class — 16 hours weekly — 2 terms) 12 credits.

572-301L. This course concentrates on an understanding of pregnancy and delivery and the impact of a new member in the family. The student learns to identify and deal with manifestations of illness in children of different ages; the implications of hospitalization; and how to cope with rapid change in condition. (May and June — 10 hours class and 20 hours experience weekly.) 8 credits.

572-400A. In an intensive study of health-illness behaviour of families, community resources and participation in the health team are explored and utilized as vehicles through which assistance to individuals and families with health problems is provided. Emphasis is placed upon further development of nursing, interpersonal skills and selected medical techniques. (3 hours class and 20 hours experience weekly) 8 credits.

572-401B. A study of the principles of management as they pertain to the delivery of health care to groups of patients. This study is viewed within the context of today's health care issues. The nursing profession is examined within an historical perspective and as a force in today's society. (3 hours and 20 hours experience weekly.) 8 credits.

Experience is obtained in the McGill teaching hospitals and selected community agencies under the direction and guidance of the staff of the School of Nursing. Nutrition and pharmacology are integrated with nursing courses.

Following completion of the baccalaureate program, internships of 2-4 months are planned for selected students to prepare for nursing practice in primary health care or as nurse specialists in clinical fields.

5 MASTER OF SCIENCE [APPLIED] PROGRAM

5.1 GENERAL INFORMATION

The two-year program leading to the degree of Master of Science (Applied) is designed to prepare clinicians and researchers for the expanding function of nursing in our rapidly developing health care services. The options of the program, clinician *or* researcher, are closely associated with the

Research Unit in Nursing and Health Care which has been established in the School of Nursing. Our growing attention to the study of nursing and health care problems should contribute to the quality of care and the delivery of health services in this country. Research in the health care field by graduates of the program will eventually lead some to undertake further study at the doctoral level.

Option A — Clinical Nursing Practice

To meet expectations for an expanded role function and for clinical nursing expertise in all domains of health care, the Master's program provides for the study of nursing over a two-year period incorporating research and evaluation methods in the investigation of nursing problems. All areas are available for students to experience, study and explore: maternal-child and family health, common health problems and illness situations in the various settings of hospital, community, home, health centre and school.

Option B — Research in Nursing and Health Care

The two-year program combines the study of nursing in the expanded role with opportunity to carry out a thorough investigation of a problem in nursing or health care evaluation. Emphasis is placed on the design of research and evaluation projects. All clinical facilities and types of problems are available to students for exploration.

5.1.1 Entrance Requirements

Applicants for the M.Sc. (Appl.) degree must have completed a baccalaureate degree with a superior record of academic achievement (high second class or C.G.P.A. of 3.5). To qualify for either the Clinical Nursing Practice Program (Option A) or the Research in Nursing and Health Care Program (Option B), preparation in nursing comparable to the baccalaureate programs offered at McGill and accomplishment and development as a nurse are required. There are a number of specific minimum requirements at the baccalaureate level for B.N. applicants to Option B.

Non-nurses holding a baccalaureate degree comparable to a B.Sc. or B.A. program offered at McGill and who have potential for the study of nursing may be admitted to a Qualifying Year. There are a number of specific minimum requirements at the baccalaureate level for B.A. and B.Sc. applicants to the Qualifying Year.

All nurse applicants are expected to have current registration in the province or country from which they come.

APPLICATION FOR ADMISSION

Application forms and other information may be secured from the Director, School of Nursing. Classes are admitted in September.

ACADEMIC REGULATIONS

The General Rules Concerning Higher Degrees apply. (See Section 4 of the *Faculty of Graduate Studies and Research Announcement).* A minimum of two years of study is required for students entering the two-year program and three years of study for those who enter as Qualifying students, one year of which in both instances may be taken on a half-time basis, i.e. extended over two years.

The comprehensive examination, Nursing 573-601 and the Nursing Seminar 573-602; or Research Seminar 573-603 should be taken on completion of all other course requirements. Graduates of B.A. and B.Sc. programs are expected to obtain their license to practice nursing (R.N.) following successful completion of requirements for the M.Sc. (Appl.) degree.

Candidates may maintain their registration with the University for five years after completing their course and residence requirements. The object of this regulation is to encourage candidates to complete their program and qualify for the degree without delay (see Faculty of Graduate Studies and Research Regulation 34(e).

EXPENSES

	Tuition	Student Services and Societies Fees
1st Year	$570	$99.50
2nd Year	$285	$64.50
TOTAL	$855	$164.00

Other Costs

Room and Board ..... $2000 — $2500 per year
Books.....$200 — $250 per year
Other expenses including typing ..... $150 per year

5.2 COURSE OF STUDY

FIRST YEAR (Option A and Option B)

Nursing 573-611D. Seminar in Practice of Nursing.
Nursing 573-612A. Research Methods in Nursing.
Nursing 573-615B. Health Care Evaluation.
Psychology 204-204A. Psychological Statistics
OR
Sociology 166-350A. Elementary Statistics in Sociology and Anthropology.

One and a half electives.

SECOND YEAR

Option A — Clinical Nursing Practice

Nursing 573-711D. Study of Problems in the Practice of Nursing.
Nursing 573-763A and 764B. Teaching of Nursing and Practicum.
OR
Nursing 573-772A and 773B. Development and Management of Nursing Services and Practicum.

One Elective.

Option B — Research in Nursing and Health Care

Nursing 573-712D. Research in Nursing and Health Care.
Nursing 573-763A. Teaching of Nursing.
OR
Nursing 573-772A. Development and Management of Nursing Services.
Statistics — an advanced course.
Introduction to Data Processing, computation and programming.

Elective courses, selected in consultation with the advisor, are available from Arts, Science, Education and some, in the health care field, from the Department of Epidemiology.

ADDITIONAL REQUIREMENTS (to be completed toward the end of the program):

Nursing 573-601. Comprehensive Examination.
Option A — Clinical Nursing Practice. A comprehensive examination on the practice of nursing as it relates to the problems of patient and family well-being and community health.
Option B — Research in Nursing and Health Care. A comprehensive examination on the practice and study of nursing as it relates to health and health care services.

Nursing 573-602. Nursing Seminar — Option A. Presentation and discussion of a significant problem in the practice of nursing to faculty and to concerned practitioners in the clinical field.

Nursing 573-603. Research Seminar — Option B. Presentation and discussion of student's research or evaluation project to faculty and to concerned practitioners and researchers in the clinical field.

QUALIFYING YEAR (non-nurses entering with B.A. or B.Sc.)

Nursing 573-511D. Practice of Nursing — Part I.
Nursing 573-506D. Patterns of Illness and Health
OR
Equivalent courses to be selected in consultation with advisor
Nursing 573-507B. History and Development of Nursing.
Nursing 573-512L. Practice of Nursing — Part II.

One Elective

Students must complete all requirements for entrance and for the Qualifying Year prior to enrolling in the Master's Program proper. Fees are as listed above for first year Master's students.

5.3 DESCRIPTION OF COURSES

GRADUATE PROGRAM

573-611D. SEMINAR IN THE PRACTICE OF NURSING. A study of the practice of nursing through investigation and analysis of experiences in the clinical field. This study provides the method for expanding the role of the nurse and for evolving problems of research which are significant in nursing and critical to health care. Emphasis is placed on the development of knowledge and skills in family health care and specialization in one of several areas of nursing. (6 hour seminar with field experience concurrently and throughout the month of May.)

573-612A. RESEARCH METHODS IN NURSING. The application of the scientific method to the study of selected problems of health, health care and health care delivery of particular relevance to nursing. Exercises and group discussions will focus upon techniques appropriate to the construction and execution of surveys, experimental designs in social settings, and content analyses appropriate to descriptive data. (3 hour seminar with concurrent field & laboratory experience.)

573-615B. HEALTH CARE EVALUATION. An evaluation of educational and health care systems with particular reference to the nursing input in problems of health, health care and health care delivery. Evaluative research includes qualitative and quantitative approaches to assessing health status and quality of care. (3 hour seminar with concurrent field and laboratory experience.)

573-711D. STUDY OF PROBLEMS IN THE PRACTICE OF NURSING. An investigation of some of the critical nursing problems in the student's field of inquiry including extensive assessment, experimentation and evaluation of differing nursing approaches in response to particular situations. (6 hour seminar with field experience concurrently.)

573-712D. RESEARCH IN NURSING AND HEALTH CARE. A study of research in nursing and in the broad health care field. There is systematic examination of the nature of problems including available knowledge, trends and directions in research, and problems of method, measurement, validity, etc. A major research project is a requirement of this course. (6 hour seminar with concurrent field and laboratory experience.)

573-763A. TEACHING OF NURSING. The implications of method in teaching, evaluation and curriculum planning of learning to assume the expanded function of nursing within our modern health services. The relation of research in learning and in education to the preparation of the nurse is examined. (3 hour seminar with concurrent field experience.)

573-764B. PRACTICUM IN THE TEACHING OF NURSING. Laboratory and field experience in the teaching of nursing including curriculum planning and administration of a program. (3 hour seminar with concurrent experience.)

573-772A. DEVELOPMENT AND MANAGEMENT OF NURSING SERVICES. An investigation of the implications of research in nursing, in learning, and in organizational behaviour in relation to the assessment, development and management of nursing personnel and health care services. (3 hour seminar with concurrent field experience.)

573-773B. PRACTICUM IN THE DEVELOPMENT OF NURSING SERVICES. Laboratory and field experience in the management of individual patient care and family health in a variety of settings within the health care delivery system for the purpose of improving the quality of service through development of the nursing potential and the evaluation of care. (3 hour seminar with concurrent field experience.)

QUALIFYING YEAR

573-511D. PRACTICE OF NURSING — PART I. Learning to nurse in the expanding and developing health services with special reference to chronic illness in aged adults and in children and to crisis situations in families: acute episodes in long-term illness and in mother and baby care. (3 hour seminar with 12 hours concurrent field experience.)

573-506D. PATTERNS OF ILLNESS AND HEALTH. An intensive study of the ecology of health and the pathology of illness including methods of assessment, therapy and control and approaches to the development of individual, family and community health. (3 hours lecture and tutorial with concurrent laboratory and field experience.)

573-507B. HISTORY AND DEVELOPMENT OF NURSING. A study of nursing within its social context with particular emphasis on the evolving function of nursing historically and in our rapidly changing society. (3 hour seminar.)

573-512L. PRACTICE OF NURSING — PART II. Learning to nurse the sick child and adult with particular emphasis on the acute phase of illness. (3 hour seminar with 30 hours concurrent field experience in May, June and 2 weeks in September.)

For the description of other courses see the *Announcements* of the Faculties of Arts and of Science and of the Faculty of Graduate Studies and Research.

6 MASTER OF NURSING [TEACHING] PROGRAM

6.1 GENERAL INFORMATION

The course aims to prepare teachers of nursing for the new educational programs across Canada. The program of one calendar year is based on the belief that beginning specialists in nursing, can, within this time, study how students learn to nurse and relate teaching methods to the conditions required for learning. Courses in learning and in education from other disciplines are included to assist students in exploring and participating in the teaching of nursing throughout the academic year and in the internship period.

ENTRANCE REQUIREMENTS

Applicants must have completed a *three* or *four* year basic nursing program comparable to the Bachelor of Science (Nursing) offered at McGill and have a superior record of academic and professional achievement and development. All students are expected to have current registration in nursing in the province or country from which they come.

APPLICATION FOR ADMISSION

Application forms and other information may be secured from the Director, School of Nursing. Classes are admitted in September.

EXPENSES

Tuition	$570
Student Services and Societies fees	$99.50
Summer session	$114
Other costs	
Room and board	$1,600—$2,000 per year
Books	$150—$200 per year
Other expenses, including typing	$150 per year

6.2 COURSE OF STUDY

CORE COURSES

574-661D. Teaching of Nursing
574-662B. Curriculum Development
Education 414-614C. Sociology of Education.

Two full courses and one half-course selected in consultation with the Department.

6.3 DESCRIPTION OF COURSES

574-661D. TEACHING OF NURSING. A study of how students learn to nurse and of the situations within which learning takes place. Participation in teaching and examination and evaluation of teaching practices. Description and analysis of a

learning-teaching phenomenon experienced by the student. (6 hours. Concurrent fieldwork in addition; 2 months internship, May and June.)

574-662B. CURRICULUM DEVELOPMENT. Consideration of factors involved in planning a course in nursing such as the function of nursing and types of nurse, the derivation and development of nursing knowledge, planning and use of clinical experience, sequence, evaluation, school agency relations (1-1/2 hours.)

For the description of other courses see the *Announcements* of the Faculties of Arts and of Science and of the Faculty of Graduate Studies and Research.

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PHYSICAL AND OCCUPATIONAL THERAPY

1976/77

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The University reserves the right to make changes without prior notice to the information contained in this publication, including the alteration of various fees schedules and the revision or cancellation of particular courses.

Students intending to seek membership in a professional corporation in Quebec are reminded that after July 1, 1976 they will be required to show that they possess a working knowledge of the French language, in conformity with the requirements of the Professional Code (Bill 250) and the Official Language Act (Bill 22).

School of

PHYSICAL AND OCCUPATIONAL THERAPY

1976-77

Under the Administrative Jurisdiction
of the Faculty of Medicine

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Montreal, Quebec, Canada H3C 3G1

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1 STAFF

1.1 ADMINISTRATIVE OFFICERS

ROBERT E. BELL, C.C., B.A., M.A.(U.B.C.), Ph.D.(McG.), D.Sc.(U.N.B., Laval), LL.D. (Tor.), F.R.S., F.R.S.C. **Principal and Vice-Chancellor**

EIGIL D. PEDERSEN, B.A.(Sir G. Wms.), M.A. (McG.), Ed.D.(Harv.)
Vice-Principal (Academic)

LEO YAFFE, B.Sc., M.Sc.(Man.), Ph.D.(McG.), F.C.I.C., F.A.P.S., F.R.S.C.
Vice-Principal (Administration)

ALLAN C. McCOLL, D.F.C., B.Com.(McG.), C.A.
Vice-Principal (Finance)

WALTER F. HITSCHFELD, B.A.Sc.(Tor.), Ph.D.(McG.), F.R.Met.S.
Vice-Principal (Research)

COLIN M. McDOUGALL, D.S.O., B.A.(McG.)
Secretary-General

JEAN-PAUL SCHULLER, B.A.(Ott.) **Registrar**

PEGGY SHEPPARD, B.Ed.(McG.), B.A.(Sir G. Wms.) **Director of Admissions Office**

R.F. PATRICK CRONIN, M.D., C.M., M.Sc.(McG.), F.R.C.P.(London), F.R.C.P.(C)
Dean of the Faculty of Medicine

HELEN M. GAULT, Dip. Ed. P.T.(Eng.), B.Sc. (P. & O.T.)(McG.) **Director and Associate Professor**

EDITH P. ASTON, Dip. Ed. P.T., B.Sc.(P. & O.T.)(McG.) **Co-ordinator, Physical Therapy**

JOYCE D. FIELD, Dip. O.T.(Tor.), B.A.(Montr.)
Co-ordinator, Occupational Therapy

ANNE-MARIE VAN DAELE, M.A.(Phys. Ther.) (Stanford), Lic. Kinesither.(Louvain).
Co-ordinator, Graduate Program

1.2 STAFF BY DEPARTMENTS

Occupational Therapy

Assistant Professor
Joyce D. Field
Lecturers
Jean Colburn, Anne Opzoomer, Beverlea K. Roper, Barbara Rosenthal, Beverley Stacey

Physical Therapy

Associate Professor
Helen M. Gault
Assistant Professors
Edith P. Aston, Anne-Marie Van daele, Carol Richards, Joan Ward, P.A. Wells
Lecturers
Sharon L. Dauphinee, Margaret J.G. Hunter, Ann Peart, Dorothy O. Thomas, Jean Wessel
Instructor
Leila Nicholson

2 GENERAL INFORMATION

2.1 DEGREES OFFERED

Occupational Therapy is the art and science of directing man's response to selected activity for the purpose of promoting and maintaining health, to prevent disability, to evaluate behaviour and to treat patients with physical or psychological dysfunction. The occupational therapist a) cooperates with other health professionals, social agencies and the patient himself, to determine his overall treatment, b) establishes the occupational therapy program for the patient according to precise short and long-term goals and supervises this program modifying it to the needs of the patient, c) acts as a consultant in such matters as community health or architectural barriers, and d) takes part in fundamental and clinical research.

Physical Therapy is the art and science of physical treatment and rehabilitation utilizing physical, chemical, electrical and electromagnetic properties in conjunction with the manual skills of massage and therapeutic exercises for an individual who manifests physical and psychological disorders. The scope of the profession includes patient evaluation, treatment planning, treatment delivery, education and consultation in the clinics and community settings in cooperation with the medical and paramedical professions and the social agencies concerned.

Bachelor of Science in Occupational Therapy [B.Sc. (Occ. Ther.)]

The full curriculum consists of three academic years from a Quebec Collegial Program in the Health Sciences or equivalent. Included are courses in science together with professional training in Occupational Therapy. Clinical experience is provided in the teaching hospitals of the Faculty of Medicine, McGill University, and other affiliated centres.

Bachelor of Science in Physical Therapy [B.Sc. (Phys. Ther.)]

The full curriculum consists of three academic years from a Quebec collegial program in the Health Sciences or equivalent. Included during the three year program are courses in science together with professional training in Physical Therapy. Clinical experience is provided in the teaching hospitals of the Faculty of Medicine, McGill University, and other affiliated centres.

Master of Science (Applied) in Physical Therapy

The full curriculum consists of two years of study following a Bachelor of Science degree in Physical Therapy or equivalent plus two years of clinical experience (see page 0).

2.2 REQUIREMENTS FOR ADMISSION TO PROGRAMS LEADING TO B.Sc. (Occ. Ther.) OR B.Sc. (Phys. Ther.)

The undergraduate programs in the School of Physical and Occupational Therapy have been designed on the assumption that the student has a background in science equivalent to that provided by the Quebec Diploma of Collegial Studies; that is, that he has completed the following college-level courses or their equivalent: two semesters of biology; two semesters of general chemistry; one semester of organic chemistry; three semesters of physics (including one semester of electricity and magnetism), and calculus I and II. Introductory courses in psychology and sociology are also recommended.

Quebec students who have obtained a Diploma of Collegial Studies in the Health Sciences Stream are expected to have taken the following prerequisite courses: Biology 301 and 401 or 921 and 931; Physics 102, 202, and 302; Chemistry 101, 201, 202; Mathematics 101, 103, and 203. Students are strongly advised also to have taken two semesters of Psychology and one in Sociology.

Ontario Grade 13 graduates and students who have completed the first year at Memorial University, Newfoundland are considered for entrance to a university program requiring the completion of the difference between 120 credits and the number of prerequisite credits they have earned. Courses in Biology, Chemistry, Mathematics, and Physics taken at the grade 13 level or first year university may be accepted for exemption. A student who does not have all the prerequisite courses listed above may be accepted into a four-year program taking Basic Science courses in his first year. It should be noted that Organic Chemistry must be completed prior to beginning the first year of the professional programs.

Students from provinces in Canada other than Quebec, Ontario, and Newfoundland who have completed Grade 12 with adequate standing in appropriate subjects are considered for admission to a university program requiring the completion of 120 credits. (This normally requires four years of study).

Graduates from Grade 12 in the **United States** are considered for admission to a university program requiring the completion of 120 credits (normally four years of study). Students who have passed Advanced Placement Examinations in appropriate subjects with a grade of "3" or better will be granted some advanced standing. Students who are admitted to a 120 credit program take Basic Science courses in their first year. These students must also complete a course in Organic Chemistry during the summer after the first year of study if they are to advance to the first year of the professional programs.

Students from the **United Kingdom and Commonwealth countries** must have completed G.C.E. examinations at the Advanced Level in Biology, Chemistry, Mathematics and Physics, and have achieved a grade of "C" or better in each if they wish to be considered for admission to a three-year program of study. Students who lack these qualifications but who meet the entrance requirements for the Faculty of Science may apply for admission to that Faculty. Upon completing one year of study in appropriate courses, they may apply for admission to a three-year program in Physical Therapy or Occupational Therapy.

2.3 APPLICATION FOR ADMISSION TO PROGRAMS LEADING TO B.Sc. (Occ. Ther.) OR B.Sc. (Phys. Ther.)

Application for admission to any year must be made through the **Admissions Office of the University.** The deadline for the submission of applications is **March 1st** of the entering year. A non-refundable application fee of $15.00 must accompany the application form. Application forms must be obtained directly from the Office of Admissions, McGill University, P.O. Box 6070, Station 'A', Montreal, Quebec H3C 3G1.

Students from the **United States** must write College Entrance Examination Board Tests, including the Scholastic Aptitude Test and three other appropriate achievement tests. Students from the Eastern United States may obtain information about the tests, testing centres, etc., by writing to: The College Entrance Examination Board, Box 592, Princeton, New Jersey, 08540. Students from the West should write to: The College Entrance Examination Board, Box 1025, Berkeley, California, 94701. The applications of these students are judged on the basis of the complete high school record, including the marks for the first semester of the final year, and other data as described in the booklet which accompanies the application form.

Students from **overseas** are advised to write College Entrance Examination Board Aptitude and Achievement tests to support their application. Information with respect to these tests may be obtained by writing to the College Entrance Examination Board, Box 592, Princeton, New Jersey, 08540, U.S.A.

Applicants whose mother tongue is not English must submit acceptable evidence of facility in Eng-

lish before their application for admission can be considered. The following evidence is acceptable: G.C.E. Ordinary and Advanced Level examination in English literature or composition; the Test of English as a Foreign Language (TOEFL); the University of Michigan English Language Test; the Certificate of Proficiency in English issued by the Universities of Cambridge and Michigan.

TOEFL is preferred by the University; it is administered by the College Entrance Examination Board and is easily available throughout the world. It is the student's responsibility to make the necessary arrangements with the Examining Board to write the Test in the country of residence. Full Information may be obtained by writing to the Test of English as a Foreign Language, Box 899, Princeton, New Jersey, 08540, U.S.A.

2.4 LANGUAGE POLICY

The language of instruction at McGill is English. Students may if they wish write term papers and examinations in French, but reasonable competence in English is essential to success in the university programs. The English department offers a summer course, English 110-150C, and it is recommended that students who lack fluency in English take this summer course. Although there are no language requirements for this Faculty, students who wish to practise Occupational Therapy or Physical Therapy in the Province of Quebec must demonstrate a proficiency in the French language before they can obtain membership in the respective corporations. This regulation will come into effect on July 1st, 1976.

2.5 FEES

Annual undergraduate fee is $19.00 per credit. In addition, there are Student Society Fees of $26.00, Student Services Fees of $60.00 and a Graduation Fee of $10.00. Refer to *General Announcement* for details.

Expenses for textbooks and other equipment is approximately $200.00 per annum; uniforms approximately $100.00.

2.6 PRIZES

The Canadian Physiotherapy Association Book Prize is awarded to the student with the highest standing throughout the B.Sc.(Phys. Ther.) program.

The Carol Rutenberg-Silver Memorial Award is presented to the student with the highest standing in the final year of the B.Sc.(Phys. Ther.) program.

The Canadian Association of Occupational Therapists' Award is presented to the student with the highest standing in theory throughout the B.Sc. (Occ. Ther.) program.

The Jeannette Hutchison Memorial Prize is awarded by the Professional Corporation of Occupational Therapists of Quebec to the student demonstrating overall excellence in the clinical application of Occupational Therapy throughout the B.Sc. (Occ. Ther.) program.

Scholarships, Bursaries, Loans, Prizes and Awards

A complete list of scholarships, bursaries, prizes and awards, and the regulations governing the various loan funds are given in the *Undergraduate Scholarships Announcement* which may be obtained from the Registrar's Office.

2.7 RESIDENTIAL FACILITIES AND STUDENT SERVICES

Full information concerning residential facilities and student services is given in the *General Announcement.*

2.8 LICENCE TO PRACTISE

Certain provinces in Canada and states of the United States of America *require that those intending to practise occupational therapy or physical therapy within their borders comply with special provincial or state licensing regulations. In order to practise occupational therapy or physical therapy in the Province of Quebec, a permit must be obtained from the appropriate provincial corporation. Further information may be obtained from the offices of the associations listed below.*

2.9 PROFESSIONAL ASSOCIATIONS

In order to comply with the standards necessary for membership in both the Federal and Provincial Associations, students are required to complete further clinical practice in accredited occupational or physical therapy departments.

This standard is compatible with the licensing requirements in provinces where legislation is in force.

Canadian National Offices

Canadian Association of Occupational Therapists
4 New Street
Suite M 19
Toronto, Ontario M5R 1P6

Canadian Physiotherapy Association
25 Imperial Street
Toronto, Ontario M5P 1B9

Québec Provincial Offices

The Professional Corporation of Occupational Therapists of Quebec
1440 St. Catherine Street West,
Suite 425
Montreal, Québec H3G 1R8

The Professional Corporation of Physiotherapists of Quebec
1440 St. Catherine Street West
Suite 420
Montreal, Québec H3G 1R8

American National Offices

American Occupational Therapy Association Inc.
6000 Executive Blvd.
Suite 200
Rockville, Maryland 20852

American Physical Therapy Association
1156 - 15th Street NW
Washington, D.C. 20005

3 REGULATIONS GOVERNING ATTENDANCE, ADVANCEMENT AND EXAMINATIONS

3.1 ATTENDANCE AND TERM WORK

No student will be permitted to write an examination in any course unless he has fulfilled the requirements of the course to the satisfaction of the instructor and the Director of the School.

It is the responsibility of each student to make sure at the time of registration that there is no conflict in the timetable of the courses which he proposes to follow.

Students may be required to attend lectures regularly if the Faculty so rules. Reasons for absences are dealt with only by the Director. For illness necessitating an absence of a week or more, a medical certificate should be presented to the Office of the Director immediately after a student's return to normal attendance.

All lectures begin at five minutes after the hour, and end at five minutes before the hour. Students arriving late for lectures may be denied entrance by the instructor.

3.2 CREDIT SYSTEM

All courses carry a credit rating. A total of 96 credits must be passed for a degree in Occupational Therapy or in Physical Therapy.

Courses are graded either by letter grades or in percentages, with the following correspondences: A (80 - 100%), B (65 - 79%), C (55 - 64%), D (45 - 54%), F (0 - 44%). Grades A, B, C are termed satisfactory passes, D a conditional pass and F a failure.

Numerical equivalents of 4, 3, 2, 1, 0 are attached to the grades of A, B, C, D, F respectively. The earned grade point for each course is calculated by multiplying the credit rating of the course by the numerical equivalent of the letter grade earned. Standing will be determined on the basis of a grade point average (GPA) computed by dividing the sum of the grade points accumulated during the year by the total course credits attempted.

The cumulative grade point average (CGPA) will be the grade point average calculated using the student's entire record in the program. A failed course will continue to be used in the calculation of the CGPA even after the course is repeated and passed, or if a supplemental examination is taken.

3.3 ACADEMIC ADVANCEMENT

There are three categories of standing: Satisfactory, Probationary and Unsatisfactory.

A student must maintain a Satisfactory standing with a GPA of 2.0 or above.

Full time students in Satisfactory standing take between 12 and 18 credits per term. A load of 19 credits per term is permitted students whose GPA is above 3.0.

All professional courses in Occupational Therapy and Physical Therapy must be passed with a grade C or better. For any professional course which is subdivided into sections, each section must also be passed with a grade of C or better. For any section of a course which is not passed by a grade of C or better when the overall course mark is C or better, the mark for the course will be withheld from the record until the student has demonstrated a proficiency in each section to a grade of C or better. The original course mark will not be changed. Any student obtaining an F grade in any professional course will be required to repeat that course. A student receiving a D grade in a professional course may be required to repeat the course or section of the course or complete supervised remedial work prior to sitting the supplemental examination. Evidence must be shown that the student has completed sufficient extra tuition to indicate that he or she has reviewed the subject and is a suitable candidate for the supplemental.

A GPA of less than 2.0 places a student in Unsatisfactory Standing.

Students in Unsatisfactory Standing must withdraw from the School. They may be readmitted after appeal to the Promotions Committee of the School and subsequently considered on Probationary standing. A student in Unsatisfactory Standing for the second time will be required to withdraw permanently.

The Faculty reserves the right to require the withdrawal of any student at any time if in the opinion of the instructors he or she is incompetent.

3.4 DEGREE REQUIREMENTS

Holders of a Quebec Diploma of Collegial Studies must complete a total of 96 course credits for the degree of B.Sc. (Occ. Ther.) or the degree of B.Sc. (Phys. Ther.) (i.e. passed courses whose credit total is 96), have passed satisfactorily all profes-

sional courses and have a CGPA at McGill of at least 2.0.

Out-of-province students will have the minimum number of credits required for their degree indicated on their acceptance letter. To be eligible for a degree, they must in addition pass satisfactorily all courses required by their program, and have a CGPA at McGill of at least 2.0.

Students who graduate with a CGPA of 3.8 or better will be awarded their degrees with "Great Distinction"; those with a CGPA between 3.5 and 3.79 will receive their degrees with "Distinction".

3.5 ACADEMIC CREDIT TRANSFER AGREEMENT

In certain cases, credit may be granted by the Faculty for courses taken at other universities. Approval by the Director is necessary and should generally be obtained in advance. The Transfer Credit form is available from the Registrar's Office, F. Cyril James Building.

There is an agreement among the universities in the Province of Quebec whereby a student, under special circumstances, may take some of his or her course load in any academic year with Faculty permission at another university in the Province of Quebec and have these courses recognized by McGill.

Note: Transfer credits are not calculated in the GPA or CGPA and the grades are not entered on the student's McGill transcript.

3.6 TRANSCRIPT OF ACADEMIC RECORD

Certified transcript(s) of a student's academic record may be obtained by applying to the Registrar's Office, F. Cyril James Building.

All courses taken at McGill and all results obtained appear on the transcript.

3.7 EXAMINATIONS

Students may write examinations or term papers in English or French.

Instructors are not permitted to grant any special treatment regarding examinations to any student. Faculty requires all instructors to decline to discuss a student's mark with him before its official publication.

Interim Class Tests

Members of the teaching staff may from time to time give interim class tests if they think them necessary.

Final Examinations

Final examinations are held during an examination period following the term in which the course is given. In some courses, there is no final examination; standing in these courses is determined on the basis of term work and class tests.

Supplemental Examinations

A student who has failed in an examination and who has been given permission to write a supplemental examination *must avail himself of this privilege at the time of the next supplemental period* which is held during the month of August. Written application to write a supplemental examination must be received at the Director's Office before July 2. A fee of $10.00 for each supplemental paper is payable to the Cashier as soon as the application has been approved.

It should be noted that the supplemental result will not erase the D or F grade originally obtained which was used in calculating the GPA. Both the original mark and the supplemental result will be calculated in the CGPA (i.e. the taking of supplemental examination has the same effect on a student's GPA as does repeating the course).

Deferred Examinations

A student, who, for reasons such as illness or family affliction, verified and accepted by the Director's Office, has been unable to write one or more examinations, may receive permission to write instead deferred examinations, which normally will be written in the next supplemental examination period. The Director's Office must be informed within one week of the examination of the reasons for absences. An "L" will appear on the Report of Standing in place of a grade in such courses. It will be replaced by the grade obtained in the deferred examination on official transcripts.

Reassessment of a Grade

Papers are marked and grades calculated and handled with considerable care. However, if a student wishes his marks checked or his examination paper reread, he should apply in writing to the Director's Office. There is a fee of $10.00 which will be refunded if an error is found in the student's favour. If the result is a lower mark, the lower mark will stand and there will be no refund. Requests for reassessment of standing in more than one course will not be permitted.

Incomplete Courses

If, in the instructor's opinion, there is sufficient reason to permit a delay in the submission of required term work, an extension of deadline of up to four months after the end of the course may be granted the student. In this case, the instructor will submit a grade of "K" (incomplete). If a new grade is submitted within the deadline by the instructor, this will appear on the student's Faculty reports and verification forms following the "K" and will replace the "K" on the student's official transcript.

If the required work is not completed before the deadline the grade of "KF" will be recorded in the same way as the grade above. (KF denotes a failed course and has the same effect on the GPA as an F.)

In exceptional circumstances, and with the approval of the Director, the four month deadline may be extended further, in which case the grade of KK will appear.

A student who has not, without accepted excuse, participated or written the final examination in a course for which he has registered may be given a grade of J (absent).

4 UNDERGRADUATE COURSES OF INSTRUCTION

4.1 *BACHELOR OF SCIENCE IN OCCUPATIONAL THERAPY*

The curriculum consists of three academic years from a college program plus approximately 500 hours of Clinical Affiliation. The program is made up of 96 credits, 48 credits in professional courses, including the Clinical Affiliation, and 48 credits for academic courses in the Faculties of Arts and Science.

University 1

504-311A ANATOMY (3 credits; 2 hours lectures, 2 hours laboratory on prepared specimens). Gross anatomy of the limbs and back with some sessions devoted to the visceral systems of the body.

Members of the Anatomy Department

552-201A PHYSIOLOGY OF MAN (3 credits).

552-202B PHYSIOLOGY OF MAN (3 credits). (See announcement of the Faculties of Arts and Science.)

580-221A OCCUPATIONAL THERAPY I (3 credits.) A course to include kinesiology, activity analysis, professional orientation and personal development.

580-222B OCCUPATIONAL THERAPY II (3 credits.) A course to include: a) Occupational therapy in the treatment of conditions studied in Medical Science 580-232B; b) Muscle testing, joint range measuring, gait analysis; c) Techniques of treatment in Occupational Therapy.

580-231B MEDICAL SCIENCE I (3 credits.) A course covering human growth and development.

580-232B MEDICAL SCIENCE II (3 credits.) A lecture course to include: a) Basic concepts of pathology and clinical features of disorders of the musculoskeletal system, including fractures, orthopaedics, rheumatology and related collagen diseases; b) Introduction to psychiatry.

ELECTIVES

(See note on Electives on page 7.)

CLINICAL AFFILIATION

70 hours following end of term.

University 2

504-321A GENERAL HUMAN NEUROANATOMY (3 credits; 2 hours lectures, 2 hours laboratory.) General neuroanatomy emphasizing the structure and function of the brain and spinal cord.

580-320D OCCUPATIONAL THERAPY III (6 credits.) A course to include: a) Occupational Therapy in the treatment of conditions studied in Medical Science III, 580-335D; b) Introduction to professional writing; c) Techniques of treatment used in Occupational Therapy.

580-324B OCCUPATIONAL THERAPY IV (3 credits.) A course to include: a) Occupational Therapy in paediatrics; b) Occupational Therapy techniques of treatment used in paediatrics; c) Perceptual-motor evaluation and treatment.

580-327B OCCUPATIONAL THERAPY V (3 credits) A course to include: a) Occupational Therapy in the treatment of conditions studied in Medical Science III, 580-335D; b) Functional evaluation; problem solving in activities of daily living; c) Techniques of treatment used in Occupational Therapy.

580-335D MEDICAL SCIENCE III (6 credits). A course to include the pathophysiology and clinical features of: a) Psychiatric conditions; b) Medical and Surgical conditions; c) Neurological conditions.

ELECTIVES

(See note on Electives on page 7.)

CLINICAL AFFILIATION

Approximately 150 hours following the end of the term.

University 3

580-426A OCCUPATIONAL THERAPY VI (3 credits.) A course to include: a) Occupational Therapy in the treatment of: i) psychiatric conditions of childhood; ii) adolescent conditions; iii) geriatric conditions; b) rehabilitation clinics; c) pre-vocational assessment and treatments; d) splinting.

580-427A OCCUPATIONAL THERAPY VII (3 credits.) Projective techniques — a course to include the theory, assessment, change detection procedures and the therapeutic use of projective techniques.

580-428B OCCUPATIONAL THERAPY VIII (3 credits.) Group dynamics — a course to include the theory of groups, group development and the therapeutic use of groups in Occupational Therapy.

580-429B OCCUPATIONAL THERAPY IX (3 credits.) Administration and Research Methodology — a course to include department management;

supervision; multidisciplinary relations; and research methods applicable to occupational therapy.

580-430B OCCUPATIONAL THERAPY X (3 credits.) Clinical experience is provided in the teaching hospitals of the Faculty of Medicine, McGill University, and other affiliated centres at suitable periods throughout the three years of the course.

580-434A MEDICAL SCIENCE IV (3 credits.) A course to include: a) Child psychiatry; b) Adolescent and geriatric conditions; c) Community medicine.

ELECTIVE COURSES

A total of thirty-six credits are to be taken in elective courses throughout the three years. Included must be a science continuation of eighteen credits and Psychological Statistics 204-204A or B if not already taken.

4.2 BACHELOR OF SCIENCE IN PHYSICAL THERAPY

The curriculum consists of three academic years from a college program plus 600 hours of Clinical Affiliation. The total program is made up of 96 credits, 53 being taken in the professional courses, including the term in clinical affiliation and 43 credits from the Faculties of Arts and Science.

University 1

504-213A ANATOMY (4 credits; 1 hour lecture, 5 hours laboratory dissection.) Gross anatomy of the limbs and back.
Members of the Anatomy Department

504-312B HUMAN VISCERAL ANATOMY (3 credits; 2 hours lectures, 2 hours laboratory on prepared specimens.) Gross anatomy of the visceral systems, including the circulatory, respiratory, digestive and reproductive systems.
Members of the Anatomy Department

552-201A PHYSIOLOGY OF MAN (3 credits.)

552-202B PHYSIOLOGY OF MAN (3 credits.)
(See Announcement of the Faculties of Arts and Science.)

581-210A PHYSICAL THERAPY II — therapeutic exercise. (3 credits; 10 hours per week.) The theoretical and practical study of postural assessment, massage, hydrotherapy, normal gait and the therapeutic uses of exercise therapy in preparation for application in the clinical setting.

581-215B PHYSICAL THERAPY III — treatment procedures. (4 credits; 10 hours per week to include lectures, and practical classes.) A course consisting of clinical examinations, assessments and recording and methods of physical treatments of the disorders covered in Medical Science 581-230B.

581-230B MEDICAL SCIENCE I (3 credits; 3 hours per week.) A lecture course consisting of a general introduction to pathology and disorders of the musculo-skeletal system including fractures, orthopaedics, rheumatology and related collagen diseases.

581-260D PHYSICAL THERAPY I — functional anatomy. (6 credits; 4 hours per week.) A seminar course on surface anatomy; fundamentals of kinesiology and analysis of movement including muscle testing and joint range measurement.

ELECTIVES

(See note on Electives, page 8.)

CLINICAL AFFILIATION.

3 weeks following end of second term (see Physical Therapy XI 581-415D, page 8.

University 2

504-321A GENERAL HUMAN NEUROANATOMY (3 credits; 2 hours lectures, 2 hours laboratory.) General neuroanatomy emphasizing the structure and function of the brain and spinal cord.
Members of the Anatomy Department

581-212A/B PHYSICAL THERAPY V — group dynamics. (2 credits; 3 hours per week.) The group process as it applies in the practice of Physical Therapy.

581-312D PHYSICAL THERAPY VI — treatment procedures. (3 credits; 4 hours per week to include lectures, practical classes and clinical demonstrations.) A course consisting of: a) clinical examinations, assessments, recordings and methods of physical treatment of the conditions covered in Medical Science 581-330A, (First term); b) Basic principles of biomechanics and methods of movement analysis applicable to Physical Therapy, (Second term).

581-316B PHYSICAL THERAPY VII — treatment procedures. (3 credits; 8 hours per week to include lectures, practical classes and clinical demonstrations.) A course consisting of clinical examinations, assessments, recordings and methods of physical treatment of the conditions covered in Medical Science 581-332B.

581-325A/B PHYSICAL THERAPY VIII — electrotherapy. (3 credits; 7 hours per week.) A theoretical and practical course covering physical principles and techniques of application of electrodiagnostic procedures, electrotherapy, heat therapy, cryotherapy and radiation therapy.

581-330A MEDICAL SCIENCE II (3 credits; 3 hours per week.) A lecture course consisting of the pathophysiology and clinical features of respiratory and cardiovascular conditions, amputations, obstetrics and gynecology.

581-332B MEDICAL SCIENCE III (3 credits; 3 hours per week.) A lecture course consisting of the pathophysiology and clinical features of neurological conditions.

ELECTIVES

(See note on Electives, following.)

CLINICAL AFFILIATION

6 weeks (see Physical Therapy XII, 581-415D, following.)

University 3

581-211A PHYSICAL THERAPY IV — professionalism. (2 credits; 3 hours per week.) A study of the profession of Physical Therapy including its history, the professional associations, educational and governmental influences.

581-415D PHYSICAL THERAPY XII — clinical affiliation. (6 credits; 600 hours of clinical experience carried out during the three year program at selected intervals.) Supervised clinical practice is provided for students in the following areas: physiotherapy departments in hospitals and rehabilitation centres affiliated to the Faculty of Medicine, convalescent and home care facilities, specialized schools and community centres.

This course commences at the end of the academic year in U1 and continues throughout the program. Clinical affiliation will extend until mid-June for 1st and 2nd year students.

581-420D MEDICAL SCIENCE IV (3 credits; 45 hours)

i. A lecture course in psychiatry including the psychological problems of the physically ill or disabled.

ii. A course in community medicine designed to give the basic epidemiological concepts utilized in the delivery of health care to a community. Particular attention will be given to the organization and availability of services in Quebec.

581-435B PHYSICAL THERAPY IX — co-ordinated rehabilitation. (3 credits; 3 hours per week.) A study of the interdisciplinary approach to rehabilitation.

581-438A PHYSICAL THERAPY X — research methodology and specialized study. (3 credits; 4 hours per week.) A project course in one of the following areas selected by the student: kinesiology, pathokinesiology, biomechanics, sports medicine, psychiatry, neuro-developmental techniques, perception, gerontology, paediatrics, prosthetics and orthotics.

581-440A PHYSICAL THERAPY XI — administration (3 credits; 45 hours) A seminar and project course on departmental administration, methods of supervision, professional ethics and medico-legal responsibilities applicable to Physical Therapy.

581-455B NEUROPHYSIOLOGY. (3 credits; 3 hours per week.) Postural mechanisms: A study of neurophysiological principles of sensori-perceptuo-motor interaction as they relate to postural integration and motor behaviour.

ELECTIVE COURSES

Twenty-seven credits are to be taken in elective courses selected from the *Announcement of the Faculties of Arts and Science.* Within this choice of electives, there must be a continuation in a science subject of 18 credits and a 3 credit course in statistics, if not already taken.

5 POSTGRADUATE COURSES

5.1 GENERAL COURSES

The following courses are open to graduate Physical Therapists and Occupational Therapists:

581-410A GROSS AND FUNCTIONAL ANATOMY

581-412B PHYSICAL ASSESSMENT AND TESTING PROCEDURES

581-414B PROPRIOCEPTIVE NEUROMUSCULAR FACILIATATION

581-416B NEURODEVELOPMENTAL APPROACH TO TREATMENT (BOBATH CONCEPT)

581-418B MANIPULATION OF SOFT TISSUES

580-440A/B OCCUPATIONAL THERAPY XI — Specialized areas of study to be selected by the student to augment knowledge gained in previous academic education and clinical practice in Occupational Therapy. The course will include lectures, seminars and laboratory sessions. (This course is open to graduate Occupational Therapists only)

The following courses are open to Physical Therapists who hold a B.Sc. Degree:

581-520D PHYSICAL THERAPY Education Methods. (6 hours per week.) A course designed to relate educational methods to Physical Therapy instruction. This course will include seminars, observation sessions and supervised teaching experience both in the classroom and the hospital setting. Field experience in student supervision and clinical teaching will be carried out in Physical Therapy departments during the month of May.

581-530B PHYSICAL THERAPY. Curriculum Development for Physical Therapy. (3 hours per week.) A course emphasizing current thought in education, curriculum development and factors underlying curriculum planning.

581-541A/B PHYSICAL THERAPY — Specialized Procedures. (3 hours per week.) A seminar course providing the basic sciences to specialized procedures and revision of these advanced procedures on the basis of physiological principles and recent research.

581-632A PHYSICAL THERAPY Management and Supervision. (3 hours per week.)

5.2 MASTER OF SCIENCE (APPLIED) IN PHYSICAL THERAPY

Entrance Requirements

Candidates must normally hold a B.Sc. degree with a high second class standing and have had two years of clinical experience in Physical Therapy.

Length of Study

The program normally requires two academic years to complete. Upon recommendation by the Committee of Graduate Studies and Research and by the Department of Physical Therapy, this requirement may be reduced for exceptionally well-qualified candidates.

Application

Application for admission to the Faculty of Graduate Studies and Research should be made to the Director of Graduate Program, School of Physical and Occupational Therapy, 3654 Drummond St., Montreal H3G 1Y5.

Course Selection

The following are all 3 credit courses:

581-601A EDUCATIONAL METHODOLOGY — Processes of learning, methods of communication and teaching strategies applied to physical therapy students and clinical personnel in hospitals and rehabilitation centres and schools.

581-603A CURRICULUM DEVELOPMENT — A course emphasizing current thought in physical therapy education, curriculum development and factors underlying curriculum planning.

581-605A EDUCATIONAL METHODOLOGY — Supervised participation in the undergraduate physical therapy program in the classroom and the laboratory setting.

581-607B EDUCATIONAL METHODOLOGY — Practical application in hospitals and centres.

581-610A RESEARCH METHODOLOGY — Research design appropriate to physical therapy. Philosophy of scientific enquiry and basic principles of research design with special consideration to problems of research in the health sciences.

581-612B COMMUNITY HEALTH NEEDS — Analysis of social trends and problems influencing the present practice and future development of health care delivery systems with particular emphasis on physical rehabilitation in the Province of Quebec.

581-614B PHYSICAL THERAPY DEVELOPMENT I — Advanced analysis and comparison of current therapeutic techniques on the basis of recent research.

581-616B PHYSICAL THERAPY DEVELOPMENT II — In-depth investigation into the development and implementation of physical therapy in one selected area of particular interest to the individual student.

581-620A/B ADMINISTRATION — A course designed to review methods of administration and supervision in a physical therapy department: concepts in management, administration, communication and supervision applied to hospital departments and home treatment settings.

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School of

SOCIAL WORK

1976/77

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Montreal

The University reserves the right to make changes without prior notice to the information contained in this publication, including the alteration of various fees schedules and the revision or cancellation of particular courses.

Students intending to seek membership in a professional corporation in Quebec are reminded that after July 1, 1976 they will be required to show that they possess a working knowledge of the French language, in conformity with the requirements of the Professional Code (Bill 250) and the Official Language Act (Bill 22).

School of
SOCIAL WORK

1976 — 77

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CALENDAR FOR 1976-77 SESSION

1976

May 10, Monday	Summer Session commences, Special BSW
June 18, Friday	Summer Session ends
September 8, Wednesday	Registration, MSW students
September 9, Thursday	3 p.m. General Assembly and Reception, all students
September 9-11	Registration, BSW students
September 10, Friday	Lectures commence, MSW students
September 13, Monday	Lectures commence, BSW students
October 11, Monday	Thanksgiving Holiday, lectures cancelled
November 9, Tuesday	Fall Convocation
December 10, Friday	Last day of lectures and field practice, all students.

1977

January 3, Monday	Lectures and field practice resume, MSW students
January 10, Monday	Field practice resumes, BSW students
January 17, Monday	Lectures resume, BSW students
February 11, 12, Friday, Saturday	Mid-term holiday, lectures cancelled
April 8-11, Friday-Monday	Easter Holiday, lectures cancelled
April 15, Friday	Last day of lectures and field practice, all students
April 20, Wednesday	Lectures resume, Special BSW
June 24, Friday	Lectures end, Special BSW Last day for submission of MSW research reports for Fall Convocation

1 STAFF

1.1 ADMINISTRATIVE OFFICERS

ROBERT E. BELL, C.C., B.A., M.A.(U.B.C.), Ph.D.(McG.), D.Sc.(U.N.B., Laval), LL.D.(Tor.), F.R.S., F.R.S.C. **Principal and Vice-Chancellor**

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1.2 STAFF OF THE SCHOOL OF SOCIAL WORK

CLAIRE ARSENEAU, B.A. Laval), M.S.W., Dipl. in Ad. Practice McG.) **Lecturer, Field Practice**

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MYER KATZ, B.A., M.S.W., Ph.D.(Col.) **Professor of Social Work, Casework**

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TRYNA ROTHOLZ, B.S., M.S.W.(McG.) **Lecturer, Field Practice**

EDWARD V. SHINER, B.A., M.S.W., Ed.D.(Col.) **Professor of Social Work and Director of Research**

ERIC SHRAGGE, B.Sc., M.S.W.(Mich.) **Lecturer, Field Practice**

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CAROL SPEIRS, B.A.(Sir G. Wms.), M.S.W.(McG.) **Lecturer, Field Practice**

SHIRLEY STEELE, B.A.(McM.), B.S.W., M.S.W.(McG.) **Assistant Professor**

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Assistant Professor of Social Work
Community Organization

ELIZABETH URTNOWSKI, B.A.(Swarthmore), M.S.W.(N.Y.)
Assistant Professor of Social Work
Marriage and the Family

ANNETTE WERK, B.A., M.S.W.(McG.)
Lecturer, Field Practice

DAVID E. WOODSWORTH, B.A., Dipl. S.W.(Tor.), M.A.(Mich.), Ph.D.(Brandeis)
Director of the School and
Professor of Social Work

1.3 SESSIONAL LECTURERS 1976

SHIRLEY BRAVERMAN, M.S.W.(McG.)

PHILIP BECH, A.B.(Cornell), M.D., C.M.(McG.)

SANDRA BRODSKY, B.A. (Univ. of Man.), M.S.W.(McG.)

ROBERT COOPER, M.A., LL.B.(McG.)

WAYNE HANNA, M.S.W.(McG.)

ERNEST HIRSCHBACH, LL.D.(Berlin)

PEARL LEIBOVITCH, M.S.W., Dipl. Adv. Practice (McG.)

LANIE MELAMED, M.S.W.(McG.)

JOHN SIGAL, Ph.D.(McG.)

ALLAN SURKIS, Ph.D.(McG.)

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MS. ANN ANDREWS, M.S.W.
MR. COLIN ANGLIKER, M.D.
MR. PAUL ARGLES, M.S.W.
MR. PIERRE ASSELIN, M.S.W.
MRS. HUGUETTE BATSHAW, M.S.W.
MRS. K. MARJORIE BEDOUKIAN, M.S.W.
MRS. CONNIE BENOIT, M.S.W.
MRS. MIRIAM BOGHEN, M.S.W.
MR. PAUL BOULANGER, M.S.W.
MRS. ROSLYN BRAMBLE, M.S.W.
MS. CAROL BRANDWEIN, M.S.W.
MS. CAROL-LEE BROWN, M.S.W.
MR. RICHARD BROWNING, M.S.W.
MR. GALE BURFORD, M.S.W.
MR. GARY CAMERON, M.S.W.
MRS. ADRIENNE CARTER, M.S.W.
MISS PATRICIA CAVILL, M.S.W.
MS. DONNA COHEN, M.S.W.
MRS. ELINOR COHEN, M.S.W.
MR. LOUIS COLCA, M.S.W.
MRS. INGRID COOPER, M.S.W.
MRS. PHYLLIS COUZIN, B.S.W.
MRS. MARILYN CRESTOHL, M.S.W.
MISS JILL DALIBARD, M.S.W.
MR. ROBERT DAVIS, M.A.
MS. CHRISTIAN DECREY, P.S.W.
MS. RHETTA DLIN, P.S.W.
MRS. ANDREA DOUBILLET, M.S.W.
MISS HELEN DOWNEY, M.S.W.
MRS. KLARA ELSTER, M.S.W.
MR. GERARD FELLERATH, M.S.W.
MR. JOSEPH FRIEDMAN, B.S.W.
MRS. NANCY FULLER, M.S.W.
MRS. RONNIE GERTEL, M.S.W.
MRS. ARLENE GLASSBOURG, M.S.W.
MS. SHARON GLICK, M.S.W.
MRS. ROSLYN GLICKMAN, M.S.W.
MRS. BARBARA GOMBERG, M.S.W.
MS. BARBARA GOODMAN, P.S.W.
MS. MARGARET GRAHAM, M.S.W.
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MR. LEITH HAMILTON, M.S.W.
MR. WAYNE HANNA, PH.D.
MR. ANANT VISHNU HERLEKAR, M.S.W.
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MS. JANET SUTHERLAND, M.S.W.
MR. GEORGE TAYLOR, M.S.W.
MRS. MARION USHER, M.S.S.W.
MRS. LEONORE WASSER, M.S.W.
MISS SUSAN WEBB, M.S.W.
MS. GAIL YOUNG, M.S.W.

2 CENTRES FOR FIELD INSTRUCTION 1975-76

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CHILDREN'S PSYCHIATRIC CLINIC: Clinical Director, Dr. E.P. Lester

BANCROFT SCHOOL: Principal, Mr. R. Herman

BANK OF MONTREAL: Employee Relations Manager, Mr. B.A. McConnell

BARON BYNG SCHOOL: Principal, Mr. R.M. Kouri

BOYS' FARM AND TRAINING SCHOOL:
Pine Avenue: Community Treatment Supervisor, Mr. Gale Burford
Shawbridge: Director, Mr. Ron Wylie
University St.: Community Worker, Mr. Louis Colca

CATHOLIC FAMILY AND CHILDREN'S SERVICES: Executive Director, Mr. George Taylor

CENTRE COMMUNAUTAIRE, PILOTE A: Director, Mr. C.A. Marvos

CENTRE DE CONSULTATION MATRIMONIALE: Directeur Général, M.U. Desrosiers

CENTRE DE SERVICE SOCIAL EN MONTREAL METROPOLITAINE: Directeur Général, Roger Prud'homme

CENTRE COMMUNITAIRE JURIDIQUE DE MONTREAL: Directeur, M. Pierre Meunier

CHILDREN'S SERVICE CENTRE: Executive Director, Mrs. M. Gélinas

CONSUMERS' COUNCIL: Program Coordinator, Mrs. Helen Bastien

DAWSON COLLEGE: Department Chairman, Mrs. Emily Clyke

DOUGLAS HOSPITAL, Social Service Department: Director, Miss E. McLaughlin

EDWARD VII SCHOOL: Principal, Mr. M. CRAIG

ELIZABETH HOUSE: Executive Director, Ms. Olga Shine

FAMILY SERVICE ASSOCIATION: Executive Director, Mr. William Duncan

GOLDEN AGE ASSOCIATION: Executive Director, Mrs. Florence Kirshner

GRIFFINTOWN PEOPLES' PROJECT: Coordinator, Mr. Terry Coady

HYDRO COMMUNITY ACTION: Program Director, Mr. Eric Shragge

JEWISH FAMILY SERVICES: Executive Director, Mr. Solomon Brownstein

JEWISH GENERAL HOSPITAL: Social Service Department Director, Mrs. C. Wohl

JOHN HOWARD SOCIETY: Executive Director, Mr. Stephen Cumas

LAKESHORE ASSOCIATION FOR RETARDED CITIZENS: Program Director, Mrs. Judy Sandys

LAKESHORE COMMUNITY SERVICES: Executive Director, Mr. L. Coupal

LITTLE BURGUNDY COMMUNITY WORKERS: Supervisor, Professor Shirley Steele

LORNE SCHOOL: Principal, Mr. Ewin Crabbe

MAIMONIDES HOSPITAL AND HOME FOR THE AGED: Director, Social Services, Mrs. Sybil Zanger

MAISONNEUVE SCHOOL: Principal, Mr. E.C. Lessard

McGILL CLINIC IN FORENSIC PSYCHIATRY: Director, Dr. B.M. Cormier

MIRIAM KENNEDY CLINIC: Director, Dr. Colin C.J. Angliker

MIRIAM SCHOOL: Principal, Mrs. Gloria Cherney

MONTREAL ASSOCIATION FOR THE MENTALLY RETARDED: Executive Director, Mr. John McCrea

MONTREAL CHILDREN'S HOSPITAL, Social Service Department: Director, Mrs. S.B. Johnston

MONTREAL GENERAL HOSPITAL: Director, Social Services, Miss Jessie Lawrence

MONTREAL NEUROLOGICAL INSTITUTE: Director, Social Services, Miss Cynthia Griffin

MONTREAL UNITED WORKSHOP: Executive Director, Ms. Elaine May

NEW CLINIC: Program Coordinator, Mrs. Diane Reichertz

NEW WOMAN CENTRE: Coordinator, Ms. Cerise Morris

PROBATION SERVICE: Manager, Mr. Léo G. Tassé

PROTESTANT SCHOOL BOARD OF GREATER MONTREAL: Chief Social Worker, Mr. Archie McLeod

QUEEN ELIZABETH HOSPITAL: Social Services in Psychiatry, Director, Mrs. Judy Gellert

ROYAL ARTHUR SCHOOL: Principal, MR. R.S. Haynes

ROYAL VICTORIA HOSPITAL: Director, Social Services, Miss Beverly Abosh

ST. LAURENT COMMUNITY PROJECT: Program Coordinator, Prof. Dorothy Sirota

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SUMMERHILL HOMES: Executive Director, Mr. Ernest Hirschbach

UNIVERSITY SETTLEMENT: Staff Coordinator, Ms. Louise Pollack

UNIVERSITÉ DE MONTRÉAL: Directeur intérimaire, M. Jean-Marc Meunier

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WALKLEY TENANTS' ASSOCIATION: Supervisor, Ms. Annette Werk

WESTHAVEN RECREATIONAL CENTRE: Supervisor, Mr. Eric Shragge

WESTMOUNT YOUTH CLINIC: Executive Director, Mrs. Marjorie Bedoukian

YOUNG MEN'S AND YOUNG WOMEN'S HEBREW ASSOCIATION: Executive Director, Mr. Harry Kosansky

YOUNG WOMEN'S CHRISTIAN ASSOCIATION Community Planner, Ms. Claire Kerrigan

3 SCHOOL OF SOCIAL WORK

3.1 HISTORY AND PLACE IN THE UNIVERSITY

In 1918, McGill University founded a School for Social Workers which was discontinued in 1932. In 1933, with the approval and cooperation of the University, an independent school, offering a two-year program to university graduates and known as the Montreal School of Social Work, was established. In October 1945, the University resumed the function of social work education and the Montreal School of Social Work, by agreement of its Board of Trustees, became the McGill University School of Social Work. The final step in integrating the School into McGill University was taken in 1950, since which time the University has assumed complete responsibility for it.

The School is an integral part of McGill University and its students are able to participate fully in the varied life of a great university. It has its own building providing classroom accommodation, research laboratory, and a compact up-to-date social work library to which new books, documents, and pamphlets are added continually. Students may also use the McLennan Library, the Redpath Library, and other special libraries.

3.2 OBJECTIVES AND EDUCATIONAL PHILOSOPHY

The School of Social Work is a professional school whose primary objective is to prepare students for successful careers and for leadership in the field of social welfare. The goal is to educate students for practice not only in established and well structured services, but also in initiating and pioneering new and less explored areas of welfare. Students are expected to acquire the necessary knowledge, values, attitudes and technical skills of professional practice. They are, in addition, helped to develop critical and experimental approaches in the hope that during their professional careers they may contribute to the improvement of practice skill and knowledge and to the development of increasingly constructive and humane social policy and organization.

This School is a member of the Canadian Association of Schools of Social Work. Through its membership in this and other national and international organizations, the School is in close touch with significant developments in social work education on the North American continent, and throughout the world.

Until 1969-70, the School offered programs only at the graduate level, leading to the degree of Master of Social Work and the Diploma in Advanced Practice in Social Work. Conscious of a general need for more professionals in practice and for extension and strengthening of professional education, the School in 1969-70 initiated a Bachelor of Social Work degree program. This program now constitutes the first professional degree, preparing graduates for direct entry into practice, with general professional skill. It also forms a strong foundation for a specialized Master's degree.

The School does not select any special practice method or theory, but encourages first the establishment of general competence and from that base supports the choice of the individual student of specialization in specific fields of practice.

3.3 ADMINISTRATION OF THE SCHOOL

The School of Social Work is administered under the authority of the Faculty of Graduate Studies and Research of McGill University. The Director of the School is directly responsible to the Dean of that Faculty. The graduate degree programs are authorized by the Graduate Faculty Council to which representatives of the School are elected. The B.S.W. program is authorized by the Faculty of Arts.

Internal administration of the School is under the general direction of the Director. Various administrative and curriculum committees, with representatives of students and of the teaching staff, are charged with development and administration of major aspects of the School's program.

3.4 THE SCHOOL AND THE MONTREAL COMMUNITY

Montreal, the largest and most cosmopolitan city in Canada, affords varied community resources in both the private and public social services. A bilingual community, it affords unique opportunities for the study of social problems.

The School receives the full and generous co-operation of local welfare organizations in the provision of facilities for supervised field practice.

4 GENERAL INFORMATION

4.1 DEGREES AND DIPLOMAS

Two degrees and a diploma may be earned at the School. The Bachelor of Social Work degree is awarded to students who successfully complete the degree program at the undergraduate level. Students holding the B.S.W. may be admitted to the Master of Social Work program.

The Diploma in Advanced Practice in Social Work is awarded to students who already hold the Master's degree and who successfully complete the requirements for this diploma.

4.2 ADMISSION REQUIREMENTS 1976-77

BACHELOR OF SOCIAL WORK DEGREE

Educational Objectives

The Faculty of Arts, through the McGill University School of Social Work, offers an undergraduate program of professional studies in Social Work, leading to the Degree of Bachelor of Social Work (B.S.W.). The B.S.W. degree course has the following principal educational objectives:

1. To prepare students for professional practice in any one of a range of social service positions. (The B.S.W. degree represents the point of admission into the Corporation of Professional Social Workers of the Province of Quebec and the Canadian Association of Social Workers.)
2. To prepare selected students for entry into more specialized professional studies at the graduate level.

It is the policy of the School of Social Work to ensure that social workers are as diverse as the communities they serve, and when reviewing prospective applicants for the Special BSW and the Undergraduate BSW programs, special consideration is given to persons of varied backgrounds, including members of minority groups, members of low-income communities and those with paid or volunteer community work experience.

Admission to the BSW is open to three groups of applicants:

1. THREE-YEAR UNDERGRADUATE B.S.W.

Applicants to this program must have completed two years of collegiate or equivalent studies, including introductory courses in sociology, psychology, statistics and French, as recognized by the University Admissions Office. Normally a candidate will not be considered for the program unless his/her GPA is 3.0 or better. Within the group of applicants who meet this requirement, preference will be given to those who have had social work related experience, paid or volunteer, and also to those who demonstrate personal suitability for the profession of social work as determined by the personal statement and the group interview. Students applying at the end of the first year of University should count on at least 2-1/2 years of study to complete the requirements for the B.S.W. degree. At the moment no provision exists for graduates of a 3-year collegial program to obtain the degree with less than 90 credits.

Application for admission should be made to the University Admissions Office.

2. MATURE STUDENT PROGRAM.

Certain mature students may be admitted into the Faculty of Arts to a 120 credit program of study leading to a B.S.W. degree. Mature students are defined as persons 23 years of age and over who lack the academic requirements for University entrance.

In order to be considered for the B.S.W. program mature applicants must:

(a) Have had substantial work experience in social work or closely related fields;
(b) Be able to produce a satisfactory recommendation from community social agencies with which he/she has been affiliated.

Candidates for this program should apply to the Director of the University Admissions Office.

3. SPECIAL B.S.W.

A limited number of students with Bachelor's degrees are admitted into a Special B.S.W. program in which advanced standing is given for the social science content of the Bachelor's degree.

The minimum requirements for admission to the Special B.S.W. are as follows:

1. Bachelor's degree with a high standing in the final year; or, if graduating in the current year, in the last complete year.
2. Completion of at least 5 full courses in the social and psychological sciences (economics, political science, psychology, sociology and anthropology).

3. A course in statistics is a prerequisite to admission. If a research course has not been taken before admission, the student must take Social Work 407-270 as part of the B.S.W. program.

Normally a candidate will not be considered for the program unless his/her GPA is 3.0 or better. Within the group of applicants who meet this requirement, preference will be given to those who have had social work related experience, paid or volunteer, and also to those who demonstrate personal suitability for the profession of social work as determined by the personal statement and the group interview.

The Special B.S.W. is a full-time program of study and is not open to students on a part-time basis. Those wishing to pursue this program must follow the prescribed pattern of study starting with the initial summer session in May (6 weeks), the academic session (Sept.—April), and the second summer session (April—July of the following year). Students who have satisfactorily completed the Special B.S.W. program are not guaranteed admission to the Master's program.

Application for admission should be made at the School of Social Work.

THE MASTER OF SOCIAL WORK

Students who have successfully completed a B.S.W. may be admitted to the Master of Social Work program.

Because of the large number of possible candidates, it should be understood that *admission to the M.S.W. program is not guaranteed for any person simply by reason of satisfactory completion of a B.S.W.*

It is expected that, as a general rule, applicants to the M.S.W. program will have completed course work in statistics and in research methods at the undergraduate level.

Students Transferring from Other Universities or Other Countries

A small number of students who have already completed the equivalent of the first year of an M.S.W. program elsewhere will be considered for admission to the M.S.W. program in 1976-77.

DIPLOMA IN ADVANCED PRACTICE

Statement of Purpose

Students who have a Master's degree in Social Work and three years of professional practice may be admitted to the program leading to a Diploma in Advanced Social Work Practice. This year of advanced study is designed to deepen understanding and develop further professional skill in *Marriage and Family Counselling, Rehabilitation or Corrections, Research, Welfare Policy, and Administration.*

Admission Requirements

Candidates for advanced study should be those whose previous academic and professional performance has been of a high order. More specifically:

1. The candidate should posses personal characteristics and a breadth of professional interest that give promise of professional leadership. He should show capacity for scholarship and independent study.
2. He should have completed the M.S.W. program, with superior standing at a recognized School of Social Work.
3. He should have had normally a minimum of three years of professional experience, following completion of his M.S.W. program, and should be able to supply independent reports of his prefessional competence.

Doctoral Studies

In accordance with existing regulations of the Faculty of Graduate Studies and Research, a limited number of special candidates may be accepted for advanced studies leading to a Ph.D. The programs of such students which will be interdisciplinary in character, and will be designed ad hoc bearing in mind the needs and accomplishments of the individual student, will include a requirement for courses and seminars within the School of Social Work and in other academic units of the University, but will in particular require a substantial research thesis. For further information, write to the Director of the School of Social Work.

4.3 STUDENT STANDING

1. M.S.W. AND ADVANCED DIPLOMA students are expected to maintain at least "B" standing in all courses.
2. Permission to write supplementary examinations or to repeat courses is granted only upon recommendation of the Committee on Standings.
3. All students are admitted on probation. A student may be asked to withdraw at any point if, after careful review of his progress, the Committee on Standings deems this to be advisable.
4. Students enrolled in a full program of courses in any term are normally expected to devote their full time to study. Any plan for part-time study must be approved by the student's adviser.
5. B.S.W. students should refer to the *Arts and Science Faculties Announcement* for regulations concerning student standing.

4.4 ACADEMIC CREDIT TRANSFER AGREEMENT

Students wishing to take courses for credit towards their McGill degree at any university in the Province

of Quebec should refer to the section entitled "Academic Credit Transfer Agreement" in the *General Announcement* for details.

4.5 FEES

The University reserves the right to make changes without notice in its published schedule of tuition and other fees if, in the opinion of the Board of Governors, circumstances so require. Tuition fees for the B.S.W. program are $19.00 per credit and this fee includes all the regular charges of the University for registration, tuition, laboratories and libraries. Student Service fees of $60.00 and Students' Society fees of $30.00 are separately assessed and must be paid at the same time as the tuition fees. Tuition fees for the M.S.W. program are as follows:

	Tuition	Student Services	Students' Societies
M.S.W. 1	$570.00	$60.00	$31.50

Additional Session $40.00

Adv. Soc. Work Practice Diploma $57.00 per half course

Graduation Fee $10.00

Student Services and Students' Societies fees assessed according to number of half courses taken. See *General Announcement* for details.

Students may refer to the *General Announcement* for further details and regulations for payment of fees.

4.6 BURSARIES, SCHOLARSHIPS AND LOANS

SCHOOL

Some sources exist for both loans and bursaries through the School. Inquiries may be made at the time of application for admission to the School. Since the School does not receive all the resources for bursary and/or loan purposes until late during the first term, students should endeavour to make other arrangements for their financial needs, whenever possible, prior to entering the School.

The School has access to a limited amount of funds for loans and bursaries, made available by individuals or private organizations. These funds are insufficient to meet all needs but may be used as supplements to other sources.

Inquiries concerning bursaries and loans should be made at the time of application for admission. Special request forms are available.

For the possible availability of bursaries open to students in all faculties and schools inquiry may also be made to the Student Aid Office of the University, 3465 Peel Street.

FEDERAL

The Federal Welfare Grants program awards a small number of graduate scholarships based upon academic achievement. Application should be made to the Welfare Grants Division, Department of National Health and Welfare, Ottawa, Ontario.

Overseas students should inquire of their governments concerning the availability of United Nations, Colombo Plan or their country's own study grants.

PROVINCIAL

Most provinces offer bursaries on condition that recipients accept employment in these provinces upon graduation. Information should be obtained from Provincial Departments of Welfare.

Quebec residents may apply before January 1 for educational bursaries for the following year. Application should be made to the following: Service des Bourses de Perfectionnement, Ministère de l'Education, Hôtel du Gouvernement, Québec, P.Q., or through the Student Aid Office of the University, 3465 Peel Street.

4.7 STUDENT SERVICES

Full information concerning student services is given in the *General Announcement available from the Registrar's Office.*

5 CURRICULA

5.1 B.S.W. CURRICULUM

REGULAR B.S.W.

a) The normal B.S.W. comprises a combination, over the three years, of professional courses, supervised field practice and practice-related courses drawn principally from the social and psychological sciences.

b) The program is organized so that the proportion of professional content to social and psychological science content increases from year I to year III.

c) The B.S.W. degree will be awarded upon successful completion of 90 credits of study of which at least 78 must be related to the students's professional development. Of these 78 credits, 48—60 must be social work courses. Not less than 18 credits must be chosen from the social or psychological sciences. The remaining credits may be taken according to the student's own individual interests. If credits in French Language are required, they will be taken from among the credits available after satisfaction of the requirements of social work and social science credits.

d) The distribution of the 48—60 credits of Social Work content over the three years will be approximately as follows:

Year I — 12—15 credits
Year II — 18—21 credits
Year III — 18—24 credits

e) Students entering their University I year will enrol in Social Work 254D and 255D, plus one or two other 3 credit social work courses. Students who have already taken a statistics course will normally take social work 270 during this year. The remaining 15—18 credits will be taken elsewhere in the University.

f) Students entering B.S.W. II will take social work 352A, 455D and 456D, plus one or two other 3 credit social work courses. The remaining 9—12 credits will be taken elsewhere in the University.

g) Students entering B.S.W. III will take social work 458B and 480D, plus 3—6 other social work courses, including at least two of the following: 472A, 473A, 474A, 475B, 476A,B, 477B, 478A, 484B, 497A, 498B. The remaining 6—12 credits will be taken elsewhere in the University.

h) Before graduation with the B.S.W. degree it is required that each student satisfactorily complete one half course in introductory statistics and one half course in social science research methods.

SPECIAL B.S.W.

The Special B.S.W., for those holding an undergraduate degree, will be offered in three time blocks: a summer session of 6 weeks, May—June, one regular academic year, and a summer session of 12 weeks, April-May-June. Students in this program will take at least 48 credits, including courses in social work practice, field practice, and policy. Required courses are Social Work 353L, 352L, 481A, 482L, 456D, 458A, 480L, and at least two of the following courses: 472A, 473A, B, 474A, 475B, 476A, B, 477B, 478A, 484B, 497A, 498B. The remaining 12 credits will be selected from other courses offered at the B.S.W. level. Regulation (h) under Regular B.S.W. also applies to students in the Special B.S.W. program. Specific information and application material may be received directly from the School of Social Work in December for 77—78 admissions.

5.2 M.S.W. CURRICULUM

The M.S.W. degree represents a second level of professional study, in which students build their areas of specialization through individualized combinations of seminars, field practice and research, the respective proportions of each varying with the requirements of the students. The greatest possible emphasis is put upon the student's contribution to formulating his own program by selecting the field of practice in which he wishes to extend his knowledge, the mode or modes of intervention in which he would develop special competence and the related inquiry upon which he will carry out independent study and submit a written research report.

OBJECTIVES

The global objective of the Master's program is the provision of advanced professional training by means of highly integrated, individualized learning experiences. At a more specific level, the educational goals are:

1. A capacity for critical understanding of the social problems and issues, the population groups, the institutional frameworks and the policy issues pertaining to the chosen concentration;
2. the development of an advanced skill in a particular mode of practice (broadly defined, see below);
3. the ability to initiate, execute and report on an independent study essentially related to the student's area of concentration.

CONCENTRATIONS

The term "Concentration", as used here, implies a concern with specific types of social problems, social issues and populations, and with certain (actual and potential) kinds of service-providing organizations and institutions. It may imply, but does not limit, the kinds of intervention employed. A student may, for example, pursue an interest in administration or in policy studies with respect to his substantive field, as an alternative or an adjunct to an interest in the interpersonal modes of intervention. Similarly, in a limited number of cases, the student's program may, with appropriate arrangements for supervision, be constructed around a research undertaking related to his field of practice. In such a case, the student's program might include no field practice component as such.

Concentrations in which training is available include:

Child and Family Welfare
Marriage and Family Counselling
Health Services
Social Work in Industry
Community Change
Corrections (Not offered in 1976-77)
Youth and School Services
Aging
Housing
Policy and Administration

SUMMARY OF REQUIREMENTS

Required of all students are:

1. The equivalent of 8 half courses. Tutorials may be arranged to suit the student's learning priorities. Where it can be arranged, courses may be taken in other departments.

2. A practicum or equivalent experience, permitting the student to develop and demonstrate professional competence at an advanced level, in a mode and setting to be defined by arrangement with the staff member or members responsible for the student's Concentration.
3. Independent study culminating in the submission of a significant report.

Research advising is formally available from members of staff until the end of May. Students would be well advised, however, *not* to expect to complete their own work on their independent study projects before late June.

5.3 DIPLOMA IN ADVANCED PRACTICE CURRICULUM

DIPLOMA REQUIREMENTS

Courses

The Diploma in Advanced Practice will be awarded when the student has completed a minimum of *four* full courses and passed a comprehensive written examination.

Time Limit

The time limit for fulfilment of the requirements for the Diploma shall in no case be more than *four* years from date of enrolment.

Candidacy

It is desirable that students signify their interest in candidacy for Diploma *either* upon entering the Program (provided they have identified their area of specialization) or upon completion of at least one full course.

Students who are not in a position to signify their interest in candidacy at either of the aforementioned points may do so later in their program. However, under the latter circumstances, if a number of unrelated courses already have been completed, it may be necessary to complete other courses specific to the student's area of specialization.

Formal application for admission to candidacy for the Diploma should be made in writing to the Chairman of the Post-master's Committee upon successful completion of at least one full course in a theoretical area.

Applications will be evaluated by this Committee on the basis of performance in courses already completed, demonstrated capacity for independent study at an advanced level and the recommendation of the student's adviser.

6 COURSES OF INSTRUCTION

6.1 B.S.W. COURSES

407-254D. INTRODUCTION TO SOCIAL WORK. (6 credits.) An examination of major social problems associated with life in large urban areas and the social services, public and private which have been established to deal with such problems. Social work practice theory including models and theories of helping and change techniques.
Professors Reichertz and Deehy

407-255D SOCIAL WORK PRACTICUM. (3 credits) An introductory field experience to provide U1 students with the opportunity to observe social work practice, to participate in the work of a social organization, to assume responsibility for a limited practice assignment, and to conduct critical analyses of their field experiences through conference discussions and individual tutorials. Corequisite — 254D.
STAFF

407-270A,B,L. INTRODUCTION TO SOCIAL WORK RESEARCH. (3 credits) This course is intended to help students make effective use of published research reports and agency statistics, and to show them how to conduct simple research projects. It covers problem formulation, research design, data collection, analysis and interpretation, use of the computer terminal, and report writing. (Modular format).
Professor Duder

407-352A, L. THE PUBLIC SOCIAL SERVICES IN CANADA. (3 credits) An introduction to the programs of public social services in effect in Canada in the fields of income, housing and health. The course seeks to acquaint students with the characteristics of these programs, and with the policy issues which surround them and to enhance the students' ability to evaluate the functioning of the programs. This is a modular course. Students submit one written assignment in each of the three fields.
Professor McGilly

407-353L INTRODUCTION TO PRACTICE. (6 Credits.) Introduction to the principles and practice of social work. Approaches to social problem identification and analysis. The role of the social worker as an agent of change or of social control. Elements of working with individual groups and communities. Laboratory periods will permit the application of course content to practice.
Professors Katz, Dalfen

407-451B CHILDREN'S NEEDS AND SOCIAL SERVICES. (3 Credits.) The identification and analysis of the needs of children and their

families. Consideration of the processes of selected social services e.g. day care, visiting homemakers, foster family and institutional care, adoption, etc., designed to support, supplement and substitute for the family. Special emphasis will be placed on social legislation related to neglected, abused and dependent children.
Ernest Hirschbach

407-452A/L SOCIAL WELFARE ORGANIZATIONS AND DISADVANTAGED CLIENTELE. (3 Credits.) An examination of the structure of organizations serving the needs of socially disadvantaged persons or groups, and the processes through which such services are provided. Particular attention will be paid to the definition, screening and serving of disadvantaged clients as compared to those drawn from more "privileged" groups in society. Strategies for changing such organization will be explored.
Professor Deehy

407-453B YOUTH AND YOUNG ADULTS: SOCIAL NEEDS AND SERVICES. (3 Credits.) The physical, psychological and social development of youth and young adults and the relationship of such development to demands of the social environment. Emphasis is on the effects of societal change on family roles, interpersonal relationships, educational and work achievement, youth's community role, social services for youth and young adults.
Professor Dalfen

407-454A SOCIAL SERVICE IN THE HEALTH FIELD. (3 Credits.) Recommended for students expecting to proceed to further studies in Health Services. An examination of the relationship between illness and social conditions. Social planning, practice and research aspects of health care and the delivery of health services. An evaluation of current and developing professional roles of social workers in health teams, with particular emphasis on social rehabilitation of the physically and mentally ill.
Professor Marcus

407-455D* SEMINAR IN SOCIAL WORK PRACTICE. (6 Credits.) This course will focus on principles of social work practice and on developing skill in working with individuals, families, small groups and communities. Attention will be given to the applicability of selected social and psychological science concepts in constructing models of social work intervention. Methods of practice will be analyzed from a range of settings, drawing upon student field experiences. *For special B.S.W. students, the content of this course will be presented in two courses (one in the fall and one in the summer session) under two course numbers — 407-481A (3 credits) and 407-482L (3 credits.)
Members of Staff

407-456D FIELD PRACTICE. (6 Credits, two days per week September to mid-April; full-time practice during May.) Supervised educational experiences in social work practice designed to integrate practice with theoretical knowledge. Through field placements in university-affiliated teaching centres, students will work with individuals, families, groups and communities, receiving both individual and group instruction.
Field Instructional Staff

407-457B LEGAL PROBLEMS OF THE POOR. (3 Credits) A lecture-and-seminar course on law and social welfare, with the emphasis largely on the social-legal problems and rights of the poor, and methods of legal protection and redress available to them. Aspects of Canadian civil law and criminal law will be reviewed. Emphasis will be placed on the Quebec scene, with landlord-tenant, contract and debtor, matrimonial regimes, parental responsibility and social insurance. The total Canadian perspective will be considered in areas of divorce, unemployment insurance, arrest, and bail.
Robert M. Cooper

407-458A/B SOCIAL POLICY AND ADMINISTRATION. (3 Credits.) An analysis of policy issues which underlie selected social service programs; the administrative structure of such programs, their legislative base, their effectiveness and the role of the professionals in the service delivery. Examples will be drawn from the current field experiences of students in the course.
Professors Woodsworth and Drover

407-461B SEMINAR IN CORRECTIONS. (3 Credits.) An examination of criminal behaviour in Canada and the U.S., and the correctional system designed to deal with such behaviour. The parts played by the police, judiciary, penal system and the probation and parole services will be discussed, together with the role of social work in the correctional process.
Wayne Hanna

407-462A. POVERTY, INEQUALITY AND CAPITALISM. (3 credits) An examination of the notion of social welfare from the perspective of poverty and inequality. Attention is given to socio-economic dynamics of inequality in a capitalist state rather than programs designed to combat poverty. Specific topics include inequality in relation to income distributions, income redistribution, wealth, incentives, economic growth, inflation, consumption rich and poor nations.
Professor Drover

407-463B. SOCIAL WORK PRACTICE WITH THE AGED. (3 credits) A seminar dealing with social services for the aged. Topics will include: dilemmas of retirement, institutionalizing of the elderly, community care, separation and loss, role of the social worker with the elderly and their families.
Professor Sirota

407-464A. INDUSTRIAL SOCIAL WORK. (3 credits) A seminar on social work practice in industrial settings. Analysis of conceptions of work; work-related, personal and family problems, relationships between social agencies and the world of work, social service programs offered under industrial and trade union auspices.
Claire Arseneau

407-465A. SEMINAR IN SCHOOL SOCIAL SERVICES. (3 credits) The seminar will examine the interrelationships of the pupil's social environment in the culture of the school, the problems of teachers and principal and their resultant impact on the pupil's academic achievement. Existing models of social work intervention in schools will be discussed with special emphasis given to "Interprofessional Collaboration"
Professor Dalfen

407-467B. SOCIAL WORK AND PUBLIC ISSUES. (3 credits) An examination of the process by which social problems are translated into public issues, the factors influencing various interest groups in taking positions on such issues and the reasons why some succeed more than others. Particular attention will be paid to issues raised at the municipal and provincial level, which have relevance for social work.
Professor Deehy

407-471B. INDIVIDUAL SOCIAL WORK RESEARCH PROJECTS. (3 credits) This course will provide an opportunity for interested students to conduct small-scale practical research projects, either individually or in small groups, with tutorial assistance from staff members and without the formal reporting requirements of the M.S.W. research project.
Professors Duder and Shiner

407-472A SEMINAR ON FAMILY ASSESSMENT. (3 Credits.) An advanced seminar designed to integrate knowledge of human personality in social process. Emphasis will be upon the appraisal and assessment of patterns of reciprocity among members of disturbed and disorganized families. Preference will be given to students who have some contact with families.
Shirley Braverman

407-473A/B CASEWORK WITH INDIVIDUALS AND FAMILIES. (3 Credits.) Theory and practice of work with individuals and families under stress. Topics will include: categories of hazardous events; affective, behavioural and role disorganization; phases in the crisis cycle; techniques of crisis intervention and abatement.
Professor Katz

407-474A METHODS OF COMMUNITY DEVELOPMENT, SOCIAL ACTION. (3 Credits.) The aim of this course is to develop an understanding of the organizing process and to enrich the student's repertoire of direct organizing skills. Emphasis is on organizational entities, community power and conflict, organizing strategies and their application, in the context of current issues in urban community development.
Professor Torczyner

407-475B COMMUNITY ORGANIZATION. (3 Credits.) A continuation of methods of community development, and social action, with emphasis on the integration of community organization theory and practice. An examination of problems encountered in practice, current issues and trends in the conceptualization of community organization.
Professor Torczyner

407-476A/B SOCIAL WORK PRACTICE WITH GROUPS 1. (3 Credits.) Theory and practice of work with groups. Focus will be on group development theory and the skills of the worker to strengthen group potential for mutual aid. Children and adult groups in a range of settings will be examined.
Professor Magill

407-477B SOCIAL WORK PRACTICE WITH GROUPS II. (3 Credits.) An advanced course in practice, with emphasis on comparative theories of groups. Prerequisite, Social Work Practice with Groups I. (Not offered 1976-77)
Professor Magill

407-480L, D FIELD INSTRUCTION. (6 Credits.) Supervised educational experience in social work practice integrating practice with theoretical knowledge characteristic of the selected field. Individual and group instruction.

407-481A SEMINAR ON SOCIAL WORK PRACTICE I. (3 Credits.) Principles of Social Work Practice in working with individuals, families, small groups and communities. Methods of practice will be analyzed from a range of settings, drawing upon student field experience.
Members of Staff

407-482L SEMINAR ON SOCIAL WORK PRACTICE II. (3 Credits.) A continuation of 481A.
Professor Reichertz

407-483B. SEMINAR ON MINORITY GROUPS AND SOCIAL WELFARE. (3 credits) This seminar is designed to prepare students for working effectively with selected minority clientele. Content will include: the impact of formal and informal social policies and institutions on the welfare of minorities, and the relationship between cultural patterns of clients and social work practice.
Carole Chirstensen

407-484B. SEMINAR IN COMMUNITY ORGANIZATION. (3 credits) This seminar examines issues and dilemmas which students encounter in community organization practice. The workshops provide a forum to analyse neighbourhood structures, organizations and systems which affect community lives. Particular attention will be directed toward the

development of citizens' groups and coalitions, the analysis of power structures and planning with community associations for change.
Professor Torczyner

407-497A SEMINAR INTEGRATION OF PRACTICE METHODS. (3 Credits.) Discussion seminar in which attention will be given to a range of beginning theoretical attempts to define an integrated method. Emphasis will be placed on the examination of existing practice models; the problems entailed in creating a common model which allows for a differential application, and a study of the central requirements for a functional statement of practice.
(Not offered 1976-77)
Members of Staff

407-498B SEMINAR IN INTEGRATION OF PRACTICE METHODS. (3 Credits.) A continuation of 497A.
(Not offered 1976-77)
Members of Staff

6.2 COURSES OPEN TO UNDERGRADUATE AND GRADUATE STUDENTS

407-528A ACTIVITY GROUP METHODS. (Half course) In this class, play and socializing activities are studied: a. for their value as enjoyable and strength-building experiences; b. dynamically as they apply theoretically and practically to work with various types, sizes and styles of client groups; c. as a means of developing professional skills relevant to facilitating personal and interpersonal growth in working with groups; d. as a means of helping the student develop an awareness of his/her own effectiveness as a participating group member or leader.
Lanie Melamed

407-529B PSYCHODRAMA. (Half course.) Study of the rationale and techniques of psychodrama application in role playing situations for individuals and groups; increase in sensitivity to clients. Didactic lectures with application in simulated situations.
Dr. Surkis.

6.3 M.S.W. COURSES

407-602 SOCIAL VALUES AND SOCIAL POLICY. (Half course.) Analysis of value assumptions underlying social welfare policies. An examination in depth of selected major social welfare issues, with particular attention to the value assumptions and their implications for the modification of policy.
Professor Woodsworth

407-603 THE ECONOMICS AND POLITICS OF SOCIAL WELFARE. (Half course.) This course is designed to acquaint the student with the concepts and methods of economic analysis of welfare problems and policies and with the political context in which welfare programs are developed and administered.
Professor McGilly

407-604 SEMINAR IN INTERNATIONAL SOCIAL WORK. (Half course.) Discussion based upon intensive study and reports on problems in selected countries. Particular emphasis is placed on identifying major social problems, understanding the social forces bearing on those problems and considering appropriate professional approaches to aid in their solution .
(Not offered 1976-77)

407-605 POVERTY AND SOCIAL POLICY. (Half course.) An examination of the nature of poverty and of the characteristic problems of the poor, with comparative evaluation of alternative policies for resolution of the problems, including issues of maintenance of the incomes and social status of threatened populations.
Members of the Staff

407-606 CHILDREN'S NEEDS, PROBLEMS, RESOURCES. (Half course.) A study in depth of the needs of children and the related problems, with consideration of relevant treatment modalities and community resources for problem solution.
Professor Reichertz

407-607 SOCIAL SERVICES IN THE SCHOOL SYSTEM. (Half course.) An examination of public schools as community institutions with emphasis on possible roles of the social workers in relation to pupils, parents, teachers, and administration.
Professor Dalfen

407-608 ADVANCED SEMINAR IN CORRECTIONS. (Half course.) A critical analysis of selected correctional programs, in terms of their underlying theoretical base and their effectiveness in modifying criminal behaviour.
Professor Deehy

407-609 SEMINAR ON HEALTH ISSUES. (Half course.) A tutorial requiring students to study in some depth a circumscribed area of their interest. Focus may be on theories of causation, comparative approaches to treatment, variations in service delivery and others. Selected guest lecturers may be invited and interdisciplinary discussions arranged.
Professor Marcus

407-612 THEORIES OF CRIMINAL BEHAVIOUR. (Half course.) An examination of selected theories of criminal behaviour and their implications for social work intervention.
Professor Deehy

407-613 COMPARATIVE APPROACHES TO PSYCHOPATHOLOGY. (Half course.) An examination of attitudes and responses to emotional disturbances and breakdown of individuals in contemporary society. A discussion of the changing patterns of psychiatric services and the

use of a variety of health professionals and community resources. Illustrations of treatment approaches whenever feasible.
Dr. Beck

407-614 ADMINISTRATION. (Half course.) Introduction to the theory and practice of administration, with particular reference to social welfare programs.
Professor McGilly

407-615 CRITICAL STUDY OF RESEARCH IN SOCIAL WORK. (Half course.) Analysis and evaluation of social work research, and research of particular relevance to social work, from other disciplines.
Professor Shiner

407-616 RESEARCH PROJECT SEMINAR. (Half course.) Group conference with staff and students to formulate and develop research projects.
Members of the Staff

407-617 RESEARCH PROJECT. (Half course.) The major research undertaking of the student. The selection of a research topic, the design of the research, the collection and treatment of the data, the written report of the project.
Members of the Staff

407-618 INTRODUCTION TO SOCIAL WORK RESEARCH. A review of social work research methodology. (Half course. Modular format). Topics include problem formulation, research design, data collection, analysis and interpretation, use of the computer terminal and report writing. As a course assignment, each student is expected to undertake small-scale practical research tasks, related to the content of individual modules.
Professor Duder

407-620 THE FIELD OF PRACTICE SEMINAR (Half course.) The seminar will provide an opportunity for integration of knowledge, theory and skills drawn from the practicum and other courses, and for close examination of special characteristics of the field. Organization of the seminar will vary with the field of practice. All students are required to participate in the seminar in one field.
Members of the Staff

407-621 CASEWORK WITH INDIVIDUALS AND FAMILIES IN CRISIS. (Half course.) Theory and practice of work with individuals and families under stress. Topics will include: categories of hazardous events; affective, behavioural and role disorganization; phases in the crisis cycle; techniques of crisis intervention and abatement.
Professor Katz

407-622 SEMINAR ON FAMILY DIAGNOSIS. (Half course.) An advanced seminar designed to integrate knowledge of human personality in social process. Emphasis will be upon the appraisal and assessment of patterns of reciprocity among members of disturbed and disorganized families.
Professor Freeman

407-623 MARITAL AND FAMILY COUNSELLING. (Half course.) The application of selected concepts from current research and practice theory related to marriage and family — centered treatment. Modes of intervention in joint and multiple interviews will be illustrated by instructor's and student's own case material. A continuation of Seminar on Family Diagnosis.
Professor Katz

407-624 COMMUNITY AND SOCIAL ACTION. (Half course.) The aim of this course is to develop an understanding of the organizing process at the grass-roots level. Emphasis is placed upon community power and conflict, the development of organizing strategies, and the application of such strategies in groups and movements dedicated to social change.
Professor Torczyner

407-625 COMMUNITY ORGANIZATION. (Half course.) A continuation of Community Organization and Social Action, with emphasis on the integration of community organization theory and practice. An examination of problems encountered in practice, current issues and trends in the conceptualization of community organization.
Professor Torczyner

407-626 SOCIAL WORK PRACTICE WITH GROUPS I. (Half course.) Theory and practice of work with groups. Focus will be on group development theory and the skills of the worker to strengthen group potential for mutual aid. Children and adult groups in a range of settings will be examined.
Professor Reichertz

407-627 SOCIAL WORK PRACTICE WITH GROUPS II. (Half course.) An advanced course in practice, with emphasis on comparative theories of groups. Prerequisite, Social Work Practice with Groups I.
Professor Reichertz

407-630 SEMINAR IN INTEGRATION OF PRACTICE METHODS. (Half course.) Discussion seminar in which attention will be given to a range of beginning theoretical attempts to define an integrated method. Emphasis will be placed on the examination of existing models; the problems entailed in creating a common model which allows for a differential application; and a study of the central requirements for a functional statement of practice.
Professor Katz

407-631 SEMINAR ON METHODS OF SUPERVISION. (Half course.) The seminar is designed for students who, on graduation, will assume immediate responsibility in a supervisory role. The seminar will deal with theories and models related to supervision of personnel engaged in different levels of practice and a variety of services with people.
Professor Freeman

407-632 FIELD INSTRUCTION. (Full course.) Supervised educational experience in social work practice integrating practice with theoretical knowledge characteristic of the selected field. Individual and group instruction.
Field Instructional Staff

407-633 EVALUATION OF SOCIAL WELFARE PROGRAMS. (Half course) Program evaluation is examined in terms of the problems giving rise to the program, the objectives of the programs as specified outcomes, the program components, measurement of program variables, evaluation of outcomes, and the audience for whom the report is being prepared. Action research requirements are to be distinguished from evaluation requirements. Obstacles to program evaluation are noted.
Professors Shiner and McGilly

407-634 INTERDISCIPLINARY SEMINAR ON AGING AND SERVICES TO THE AGED. (Half course)

1. Examination of services to older persons.
2. Exploration of the perspectives of disciplines that have contributed to knowledge and to values in this field, and assessment of the use made of such contributions in the development of services.
3. Evaluation of the impacts of services upon recipients and upon the community.

Professors Marcus and McGilly.

407-635 SOCIAL WORK PRACTICE WITH CHILDREN. (Half course.) This course will consider direct work with young children experiencing a range of developmental, familial, and situational problems. Particular attention will be given to such themes as object relations theory, dependency, security, concepts of "self", maternal deprivation, separation and aggression. Students will be expected to provide current practice examples for discussion in the seminar.
Carol Speirs

407-636 TUTORIAL IN SOCIAL WORK. (Half course) An individual or small group tutorial in which students will work independently in conjunction with the instructor. The student will undertake a major project related to the area of specialization.
Members of the Staff

407-637. HOUSING POLICY. (Half course) An examination of the dynamics of private and public housing in Canada and policies which have been designed to influence the provision of housing. Particular attention will be given to Canadian and Quebec policies and international comparisons will be made, notably, England, France, Sweden, United States. Specific topics include: housing demand and supply, taxation and subsidies, public housing, cooperative housing, rehabilitation, tenant and landlord relationships, standards to services to special groups.
Professor Drover

6.4 DIPLOMA IN ADVANCED PRACTICE COURSES

407-700 SEMINAR IN SUPERVISION. (Half course.) A discussion of basic concepts implicit in supervision as an administrative and teaching process. Open to students who are having or who have had experience as supervisors.
Professor Freeman

407-701D COMPREHENSIVE EXAMINATION. Requires candidates for the Diploma to demonstrate ability to reorganize and integrate knowledge and perspectives over the total curriculum. Will include at least one section in the field of specialization, and one section in another area of the candidate's choice.

407-702B BEHAVIOURAL SCIENCE THEORY AND ITS RELATION TO SOCIAL WORK PRACTICE. (Half course.) Some of the major concepts of learning, role, field and communication theory will be systematically examined. Course content will include a critique of selected research in each of the above areas. Major consideration will be given to the relevance and application of behavioural theory to social work practice.

407-703 PRINCIPLES OF SMALL GROUP INTERACTION. (Half course.) A survey of theory, principles, and current research in small group dynamics, with emphasis on implications for the practice of social work.

407-704 CRITICAL STUDY OF RESEARCH IN SOCIAL WORK. (Half course.) Analysis and evaluation of social work research, and research of particular relevance to social work from other disciplines.
Professor Shiner

407-705 INDIVIDUAL RESEARCH STUDIES IN SOCIAL WORK. (Half course.) Tutorials on selected research problems.
Professor Shiner

407-706 ADVANCED PRACTICE SEMINAR IN MARRIAGE AND FAMILY COUNSELLING. (Full course.) A course emphasizing family diagnosis during first term. Theoretical presentations related to student's case material. Emphasis on: Evaluation of marital conflict, differential treatment methods, the role of the psychiatric consultant, the appropriate use of short-term counselling, individual and family interviews, group counselling with married and engaged couples.
Professor Freeman

407-707. ADVANCED PRACTICE SEMINAR IN REHABILITATION. (Full course.) In the first term, emphasis is placed on the biopsychological and socio-cultural aspects of health and disease. During the second term, particular attention will be given to the application of theory from various disciplines to the prevention, treatment, and rehabilitation aspects of chronic and disabling illness. Considera-

tion also will be given to the impact of disability on individuals, families and communities and to the actual and potential role of social work in this field.
Professor Marcus

407-708 SEMINAR IN ADVANCED RESEARCH METHODOLOGY. (Full course.) Study of contemporary theoretical and methodological approaches to social work research with special focus on design, measurement and analysis. A research project on a social work practice problem is central to the course.
Professor Shiner

407-709 FIELD PRACTICE. (Full course.) Miminum of 300 hours of supervised practice in marriage and family counselling, rehabilitation or corrections, research, or welfare administration.
Members of the Staff

407-710 ADVANCED READINGS IN SOCIAL SCIENCE. (Half course.) Under special circumstances, and on recommendation of the student's adviser, arrangement will be made for a special tutorial course, involving readings and assignments.
Members of the Staff

407-711 SOCIAL WORK IN SOCIOLOGICAL PERSPECTIVE. (Half course.) The main defining features of social work and their interconnections are to be studied in the context of the sociology of occupations. Through comparison of several fields of work this course will seek to identify some of the characteristics of professionalization of occupations with particular attention to the helping professions.
Professor Deehy

407-712 PRINCIPLES OF REHABILITATION. (Half course.) This course will consist of a critical discussion and analysis of the concept of rehabilitation, from a number of theoretical standpoints. Particular attention will be paid to theories of adult socialization and to the organization structure of socializing agencies. The subject matter will provide a general framework from which to move into the courses specific either to rehabilitation or corrections.
Professor Deehy

407-713 CONTEMPORARY SOCIAL PROBLEMS AND SOCIAL POLICY. (Half course.) A review of social policy as revealed in the social welfare structure in Canada. Critical appraisal of such policy in relation to selected social problems, with particular emphasis on criteria of adequacy and the social, economic and political factors involved in policy formation.
Professor Woodsworth

407-714 ADVANCED PRACTICE SEMINAR IN CORRECTIONS. (Full course.) The first term consists of an intensive analysis of selected theories relating to crime and delinquency and an attempt to derive from these specific treatment programs applicable to social work intervention. The second term involves a critical analysis of selected correctional programs, particularly those in which social work plays a part in terms both of theoretical underpinnings and their effectiveness.
Professor Deehy

407-715 ADVANCED PRACTICE SEMINAR IN WELFARE ADMINISTRATION. (Full course.) Students will apply, through illustrations and discussion, concepts derived from various contributing disciplines and from social work practice, to particular problems in welfare administration. Topics will include problems, for example: of formal organizations with varying orientations, of professional workers in organizations, of organizational adaptation to complex environments, of representation of client and community interests in administration, of communications where interaction among participants are highly differentiated, of organizational goalsetting, performance evaluation, and resource allocation. Various theoretical models of organization behaviour will be presented, such as "social systems" learning models and conflict models.
Professors McGilly and Woodsworth

407-716 COMPARATIVE APPROACHES TO PERSONALITY. (Half course.) A systematic examination of selected analytic and non-analytic approaches to personality. Attention will be devoted to the major concepts and basic assumptions of Freud, Rank, Adler, Horney, Fromm, Sullivan, and Rogers. Emphasis will be placed upon the implications of the various personality theories for social work practice.
Professor Katz

ELECTIVES

In certain instances, students may, where eligible, register for appropriate graduate courses offered in other departments of the University.

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SUMMER SESSION

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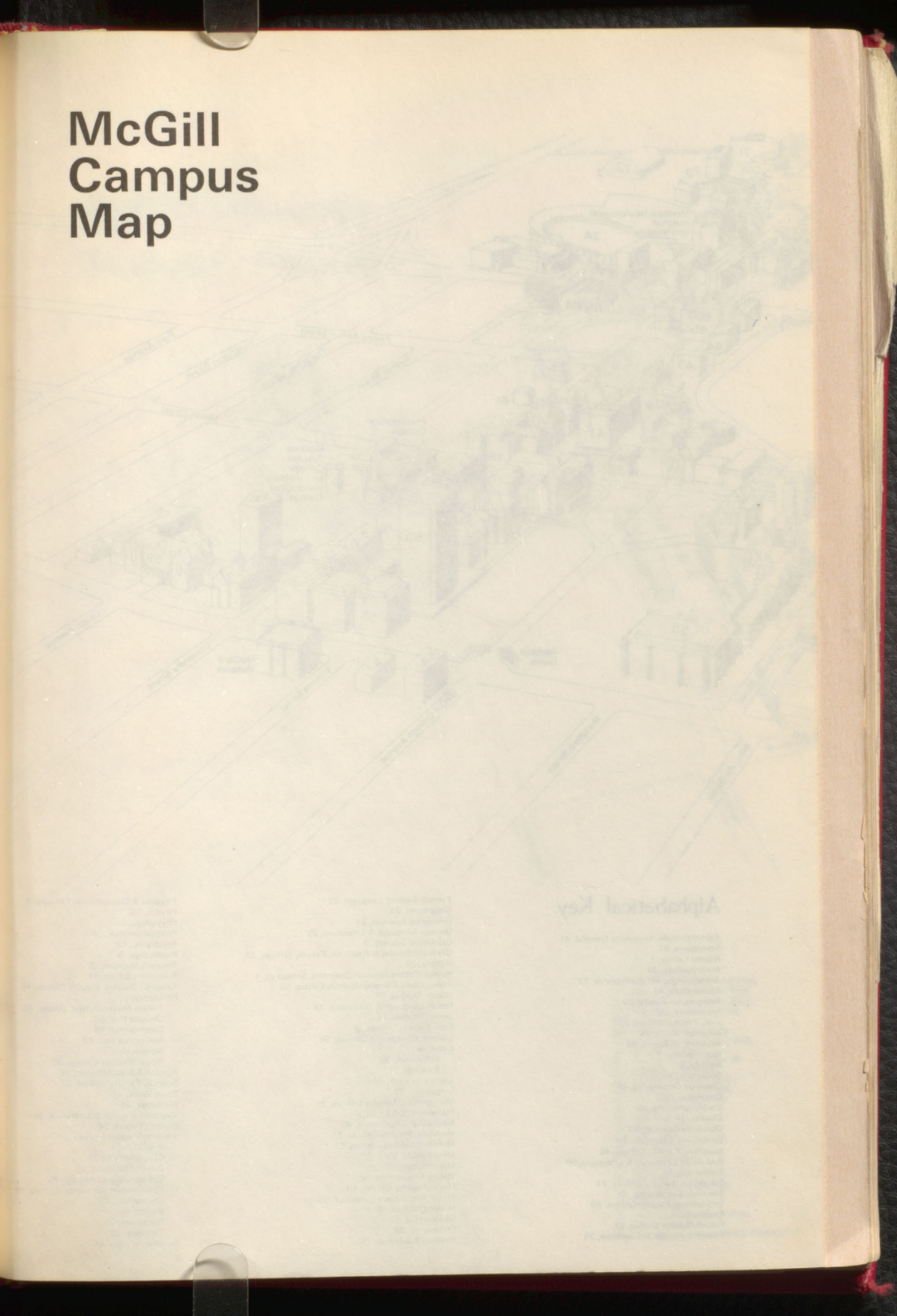
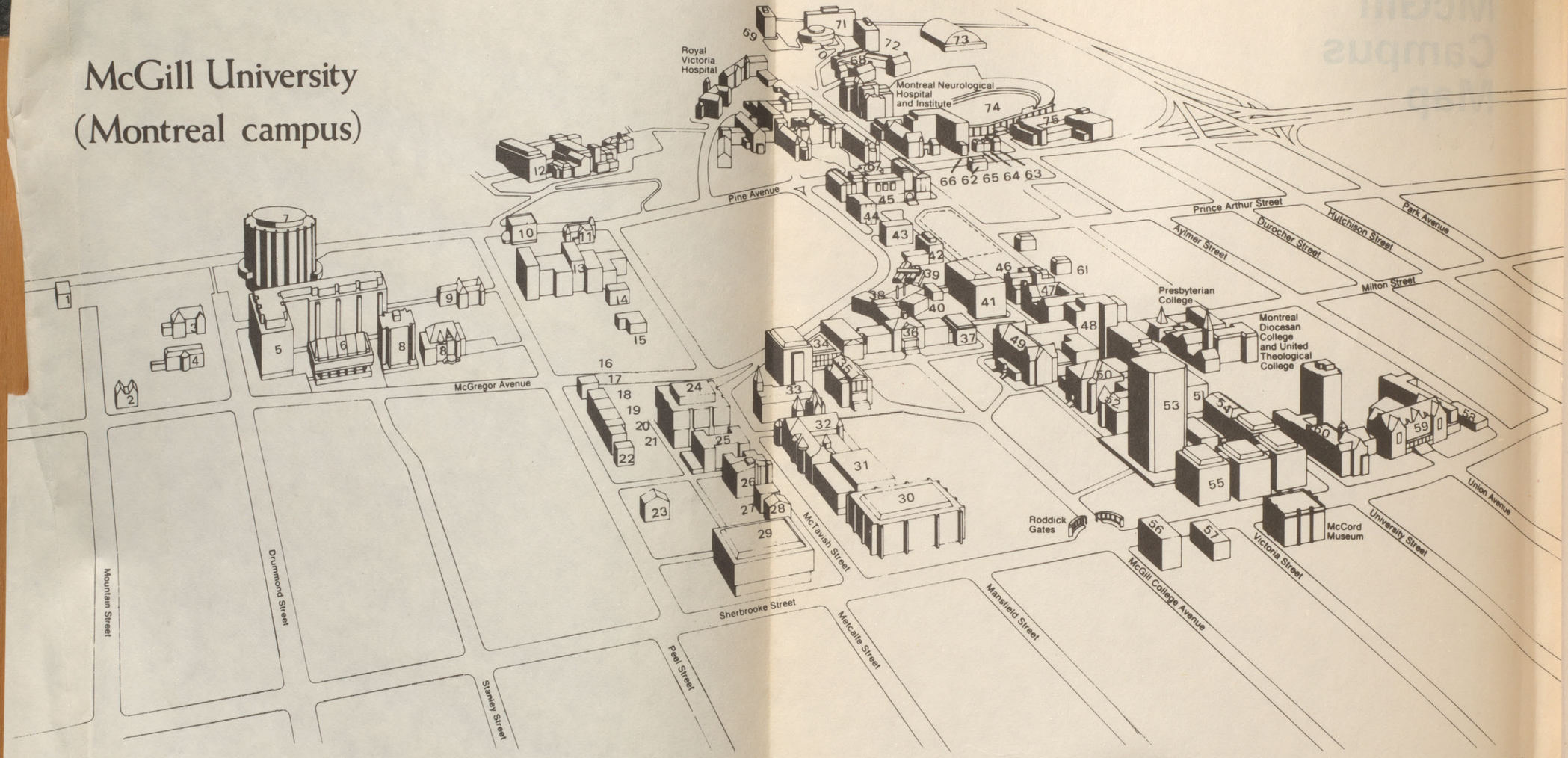
Montreal

The University reserves the right to make changes without prior notice to the information contained in this publication, including the alteration of various fees schedules and the revision or cancellation of particular courses.

McGill Campus Map



McGill University (Montreal campus)



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1 Beatty Hall
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3 Davis House
4 Hosmer House
5 Stewart Biological Sciences
6 Greenhouses
7 McIntyre Medical Sciences
8 Chancellor Day Hall
9 Mental Hygiene Institute
10 Purvis Hall
11 Duggan House
12 Allan Memorial Institute
13 Faculty of Education
14 Hugessen House
15 David Thomson House
16 3511 Peel Street
17 3491/91 Peel Street
18 3481 Peel Street
19 3483 Peel Street
20 3479 Peel Street
21 3475 Peel Street
22 3465 Peel Street
23 3437 Peel Street
24 University Centre
25 Peterson Hall
26 Faculty Club
27 3438 McTavish Street
28 3434 McTavish Street
29 Samuel Bronfman Bldg.
30 McLennan Library
31 Redpath Library
32 Redpath Hall
33 Morrice Hall
34 Stephen Leacock Bldg.
35 Redpath Museum
36 Arts Bldg.
37 Dawson Hall
38 840 McGregor
39 Old Greenhouse
40 Stationery Stores
41 F. Cyril James Bldg.
42 Foster Radiation Laboratory
43 Eaton Electronics Laboratory
44 Donner Bldg.
45 Strathcona Anatomy & Dentistry Bldg.
46 William & Henry Birks Bldg.
47 Wilson Hall
48 McConnell Engineering Bldg.
49 Macdonald Engineering Bldg.
50 Macdonald Chemistry Bldg.
51 Frank Dawson Adams Bldg.
52 Macdonald Physics Bldg.
53 Burnside Hall
54 Pulp & Paper Institute
55 Otto Maass Chemistry Bldg.
56 Strathcona Hall
57 762 Sherbrooke Street W.
58 Women's Athletics
59 Strathcona Music Bldg.
60 Royal Victoria College
61 3521 University Street
62 522 Pine Ave. W.
63 505 Pine Ave. W.
64 509 Pine Ave. W.
65 515/517 Pine Ave. W.
66 527 Pine Ave. W.
67 Pathology Bldg.
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Telephone (514) 392-6740

* The official McGill University mailing address is:
McGill University, P.O. Box 6070, Station A
Montreal, Quebec, Canada H3C 3G1

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REGISTRATION WILL BE ON A FIRST COME, FIRST SERVED BASIS.

IT IS THE RESPONSIBILITY OF EACH STUDENT TO READ, UNDERSTAND, AND ABIDE BY THE RULES AND PROCEDURES PRINTED IN THIS ANNOUNCEMENT.

LANGUAGE POLICY

The language of instruction at McGill is normally English. Students may if they wish write term papers and answers to examination questions in French (except in the case of certain language and literature courses), but competence in English is essential. English-speaking Quebec students are encouraged to develop proficiency in French.

POLITIQUE LINGUISTIQUE

A McGill, l'enseignement est normalement dispensé en langue anglaise. Les étudiants qui le désirent peuvent rédiger en français leurs dissertations et répondre en français aux questions d'examens (sauf dans le cas de certains cours de langue et de littérature), mais la connaissance de l'anglais est indispensable.

CALENDAR--1976
SUMMER SESSION PART I

Monday, May 10	Registration, Summer Session Part I. Both "terms" and full courses. Redpath Hall, 10:00 — 15:00, 16:00 — 19:00.
Monday, May 10	Classes begin: first "term" and full courses.
Wednesday, May 12	Last day for changes: half courses.
Wednesday, May 12	Last day for Late Registration: first "term" courses. Non-refundable late fee ($10) charged after May 10.
Friday, May 14	Last day for changes: full courses.
Friday, May 14	Last day for Late Registration: full courses. Non-refundable late fee ($10) charged after May 10.
Friday, May 14	Last day for refund, first "term" and full courses.
Tuesday, May 18	Last day to withdraw (W): half courses (3 credits). No refund after May 14.
Thursday, May 20	Last day to withdraw (W): 4-credit courses. No refund after May 14.
Friday, May 21	Last day to withdraw (W): full courses (6 credits). No refund after May 14.
Monday, May 24	Victoria Day. Holiday. No lectures.
Friday, May 28	First "term" classes end.
Monday, May 31	Final examinations for first "term" courses.
Monday, June 7	**Last day for submission of final marks to Summer Session Office for first "term" courses.**
Tuesday, June 1	Second "term" courses begin.
Thursday, June 3	Last day for changes: second "term" courses.
Thursday, June 3	Last day for Late Registration: Second "term" courses. Non-refundable late fee ($10) charged after June 1.
Friday, June 4	Last day for refund. (Second "term").
Tuesday, June 8	Last day to withdraw (W): 3-credit courses (second "term"). No refund after June 4.
Thursday, June 10	Last day to withdraw (W): 4-credit courses (second "term"). No refund after June 4.
Friday, June 18	Last day of classes.
Monday, June 21	Final examinations: second "term" and full courses.
Thursday, June 24	St. Jean Baptiste Day. Offices closed.
Monday, June 28	**Last day for submission of final marks to Summer Session Office for second "term" and full courses.**

CALENDAR--1976
SUMMER SESSION PART II

Thursday, July 1	Canada Day. Offices closed.
Monday, July 5	Registration, Summer Session Part II. Both "terms" and full courses. Redpath Hall, 10:00 — 15:00, 16:00 — 19:00.
Monday, July 5	Classes begin: first "term" and full courses.
Wednesday, July 7	Last day for changes: half courses.
Wednesday, July 7	Last day for Late Registration: first "term" courses. Non-refundable late fee ($10) charged after July 5.
Friday, July 9	Last day for refund, first "term" and full courses.
Friday, July 9	Last day for changes: full courses.
Friday, July 9	Last day for Late Registration: full courses. Non-refundable late fee ($10) charged after July 5.
Monday, July 12	Last day to withdraw (W): half courses (3 credits). No refund after July 9.
Wednesday, July 14	Last day to withdraw (W): 4-credit courses. No refund after July 9.
Friday, July 16	Last day to withdraw (W): full courses (6 credits). No refund after July 9.
Friday, July 23	First "term" classes end.
Monday, July 26	Final examinations for first "term" courses.
Monday, August 2	**Last day for submission of final marks to Summer Session Office for first "term" courses.**
Tuesday, July 27	Second "term" courses begin.
Thursday, July 29	Last day for changes: second "term" courses.
Thursday, July 29	Last day for Late Registration: second "term" courses. Non-refundable late fee ($10) charged after July 27.
Friday, July 30	Last day for refund. (Second "term").
Tuesday, August 3	Last day to withdraw (W): 3-credit courses (second "term"). No refund after July 30.
Thursday, August 5	Last day to withdraw (W): 4-credit courses (second "term"). No refund after July 30.
Friday, August 13	Last day of classes.
Monday, August 16	Final examinations: second "term" and full courses.
Monday, August 23	**Last day for submission of final marks to Summer Session Office for second "term" and full courses.**

The attention of Arts and Science students is drawn to the fact that the dates of supplemental examinations for courses given during the 1975-76 Fall and Winter Terms overlap with the last week of Summer Session Part II. Students who will be taking an August supplemental examination should consult the examination timetable *before* registering in Summer Session Part II.

1 STAFF

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2 GENERAL INFORMATION

There are two parts to the Summer Session: Summer Session Part I, to be held from May 10 to June 18 and Summer Session Part II, from July 5 to August 13. Part I and Part II are each further divided into two "terms" in order to distinguish between full courses (6 credits) which are held over the six-week period and half courses (3 credits) which are, in general, held over three weeks. Please consult the calendar of dates at the front of this Announcement for the starting dates of each "term".

Some courses may be offered prior to May 10 and some may extend beyond the normal three or six-week periods; please consult the appropriate sections of this Announcement for specific dates.

The term "daily" refers to Monday through Friday inclusively. Please note that some courses may be offered on alternate days.

The French Summer School and the Centre for Continuing Education will offer additional courses which are not administered by the Summer Session. Individuals interested in those specific programs should contact the respective offices concerned.

All inquiries concerning graduate courses should be directed to the Faculty of Graduate Studies and Research, McGill University, P.O. Box 6070, Station A, Montreal, Quebec H3C 3G1, telephone 392-5092.

Students applying for *graduate* studies in Education should consult the Faculty of Education section of this Announcement.

Students intending to follow courses in the Faculty of Agriculture should consult that Faculty's section of the Announcement regarding special registration procedures.

Following is a description of the various forms used by the Summer Session Office.

Summer Session Registration Form: to be completed by *ALL* summer students (Regular, New, Visiting, Special). Graduate students must complete the Faculty of Graduate Studies and Research Summer Session Registration Form. STUDENTS MUST NOT COMPLETE MORE THAN ONE REGISTRATION FORM. Students wishing to add, change, or drop a course (or courses) after their initial registration must complete a Course Change Approval Form.

Faculty Authorization Form: to be completed by ALL undergraduate students currently registered in a Degree or Diploma program at McGill and new students in possession of their final letter of acceptance. These forms can be obtained through the Summer Session Office or through the General Office of the Faculty in which the student is registered. The signature of the Associate Dean of the student's Faculty must be secured *before* the form is submitted to the Summer Session Office.

Course Change Approval Form: to be completed by ALL students wishing to change a course (or courses). These must be picked up at the Summer Session Office, presented to the Associate Dean of the student's Faculty for signature and returned to the Summer Session Office for processing. Summer Visiting and Summer Special Students must secure the permission of the Summer Session.

Course Withdrawal Form: to be submitted by ALL students wishing to withdraw from a course or courses (these can be obtained at the Summer Session Office).

Waiver: to be completed ONLY by Summer Special Students, new students admitted conditionally, and regular students registering for Summer Session Part II while in Unsatisfactory standing. This is a form releasing McGill University from the obligation to recognize the credits for which students are registering towards a degree. This form can be obtained through the Summer Session Office.

Letter of Permission: A letter to be submitted by Visiting Students stating the number of credits and/or courses to be undertaken in the Summer Session at McGill and signed by the Registrar or other responsible authority of the Visiting Student's institution.

Residence Application Form: to be completed by students wishing to live in residence during the Summer Session.

It is important to note that there is **no Application Form to the Summer Session.** Candidates may request information by mail, by telephone or in person, but will be **registered** only upon presentation of the documentation listed in the applicable categories below. Graduate students apply directly to the Faculty of Graduate Studies and Research.

CATEGORIES OF STUDENTS

NEWLY ADMITTED McGILL STUDENTS

Conditional Acceptance: Students admitted to McGill conditionally will be required to sign a Waiver releasing the University from the obligation to recognize credit towards a degree for the work accomplished. Registration in summer courses on the basis of the Waiver in no way guarantees admission to McGill.

Students admitted conditionally will have their registration as Special Summer Students changed to that of the Faculty into which they have been accepted as soon as *final acceptance* has been granted. In other words, the credits accumulated for their summer work will normally be counted as part of their degree program.

Final Acceptance: Students in possession of their final letter of acceptance will be required to present a Faculty Authorization Form signed by the Associate Dean of the Faculty into which they have been accepted. Students must bring with them a copy of their most recent transcripts when requesting the Associate Dean's signature. This signature must be secured *before* registering in the Summer Session.

McGILL STUDENTS

Before registering in the Summer Session, regular undergraduate McGill students must secure, on the Faculty Authorization Form, the signature of the Associate Dean of the Faculty in which they are currently registered. It is the student's responsibility to obtain this signature *before* submitting the form (by mail or in person) to the Summer Session Office.

Securing the Associate Dean's signature is only one step in the registration process. The form must then be forwarded to the Summer Session Office by the student with a Registration Form and a bank draft or money order within the deadline dates in order for registration to be completed. Possession of a signed Faculty Authorization Form does not guarantee admission after the registration deadlines. Students who do not secure the Associate Dean's signature before the registration deadlines will be made to pay the late registration fee and will not be allowed to sign a Waiver on a temporary basis.

Teachers registered in Part-time programs (other than Graduate degree programs) in the Faculty of Education must secure the signature of the Director of the Program they wish to pursue.

Permission to Register in Summer Session Part I:

Permission to register for Summer Session Part I has to be granted before reports of standing for the preceding term or session have been released. Permission to register for summer courses does not represent a decision as to standing in the Faculty. Students whose June reports of standing show them to be in unsatisfactory standing will be permitted to complete the summer courses for which they have registered, but they will be considered to be special students for the Summer Session. Successful completion of the summer courses will not guarantee readmission in September for students in unsatisfactory standing as of the June reports of standing.

Permission to Register in Summer Session Part II:

Students wishing to register for summer courses *after* their June reports of standing show them to be in unsatisfactory standing will be required to sign the Waiver which will place them in the category of special students for the Summer Session. Successful completion of summer courses will not guarantee readmission in September for students in unsatisfactory standing.

Graduate students must contact the Faculty of Graduate Studies and Research for deadline dates, official signatures, and registration forms.

SUMMER VISITING STUDENTS

A student from another university wishing to take a course or courses at McGill for credit at his own university may do so, provided he submits a letter of permission from the Registrar or other responsible authority of his home university. This letter should state the number of credits and/or courses to be attempted by the student. The Summer Session recommends that no more than 7 credits in each Session be attempted. Visiting Students from the United States, please see appropriate paragraph under "Registration by Mail".

SUMMER SPECIAL STUDENTS

In certain circumstances, students not pursuing a degree or diploma at McGill or elsewhere may be permitted to register in the Summer Session for a specific course for which they have prerequisite requirements without being first admitted to the University, but such students will be required to sign the Waiver.

REGISTRATION

Registration is on a first come, first served basis. Some courses have limited enrolment and students are advised to register early to avoid disappointment.

Summer students, except those registering in the Faculty of Graduate Studies and Research, have three options from which to choose; they may register by mail, in person through the Summer Session Office, or in person in Redpath Hall. Graduate students please consult the Faculty of Graduate Studies and Research for registration procedures.

Registration will be held in Redpath Hall on the first day of Summer Session Part I (May 10) and Summer Session Part II (July 5). Students may register in person in the Summer Session Office (9:00 — 16:30 Monday to Friday) up to the day before the Session starts; students wishing to register on May 10 or July 5 must register in Redpath Hall.

Students registering in person for courses in the second "term" of each Session may do so in the Summer Session Office up to and including the first day of classes (i.e. June 1 or July 27) between 9:00 — 16:30 Monday to Friday.

Please note that students should complete only *ONE* Summer Session Registration Form. Students registering for one course who decide at a later date to attend another must NOT complete a second registration form but must complete the Course Change Approval Form described above.

REGISTRATION BY MAIL

Students registering by mail must submit the appropriate documentation at least one week before the start of the Session or "term" they wish to attend. A Registration form is enclosed with this Announcement. The completed form must be returned along with the documents listed in the applicable categories below:

New Students: A copy (please keep the original for presentation at the September Registration) of the final letter of acceptance from the Admissions Office and a signed Faculty Authorization Form, OR a copy of the conditional letter of acceptance from the Admissions Office and a signed Waiver.

Summer Visiting Students: A letter of Permission from the Registrar or other responsible official of the Home University.

Regular Undergraduate McGill Students: A Faculty Authorization Form signed by the Associate Dean of the Faculty. This signature must be secured before the form is sent to the Summer Session Office.

Summer Special Students and Students Admitted Conditionally: A signed Waiver.

A bank draft or money order (no cash) covering full fees (with the exception of Residence fees which are payable directly to the Residence) MUST accompany the documentation. Students who do not enclose their bank draft or money order will not be registered. **Personal cheques will be returned** and the registration process will not be completed. Please make payments to the order of McGill University in Canadian funds.

Students expecting some sort of financial assistance must also submit, along with their registration form and appropriate documents, a letter from the granting agency outlining the method and date of payment.

Identification cards will be sent to registered students, including regular McGill students. No acceptance letters will be sent; receipt of the I.D. card will constitute notification of acceptance. These cards are necessary for using library facilities.

Those students whose documentation is received in the Summer Session Office less than one week before the start of the session or "term" they wish to attend will not be sent their I.D. cards but will pick them up at the Summer Session Office.

Please note that it is necessary to pay for courses as you register. If you prefer to pay for only part of

your courses, register only for the first course(s) you wish to attend and enclose the tuition for this (these) course(s) --bank draft or money order. You may then add any additional course(s) for which you have secured authorization and pay for it (them) at any time up to and including the first day of classes for that (those) course(s).

SUMMER VISITING STUDENTS FROM THE UNITED STATES

Summer Visiting students from the United States should complete their Summer Session registration as early as possible in order that a letter may be sent to them outlining courses and fees paid. This letter is to be shown at border crossing points. American students need identification and must be able to prove that they are capable of assuming their financial responsibilities during their stay in order to be allowed to enter Canada.

Summer Visiting students who do not have this letter in their possession may, at the discretion of border crossing guards, be granted permission to enter Canada with a seventy-two hour Visitor's permit (they should, however, be able to present proof of financial support, identification, and the student's copy of the registration form at that time). They should come to the Summer Session Office immediately and register. A letter will then be given to them which must be brought to the Immigration Office, Alexis Nihon Plaza, Montreal, in order for their temporary permit to be extended.

REGISTRATION IN THE SUMMER SESSION OFFICE

Students may register in the Summer Session Office any time convenient to them between 9:00 — 16:30 Monday to Friday except on May 10 and July 5 when registration is exclusively at Redpath Hall. Students must bring with them:

New Students: A copy (please keep the original for presentation at the September Registration) of the final letter of acceptance from the Admissions Office and a signed Faculty Authorization Form, OR copy of the conditional letter of acceptance from the Admissions Office and a signed Waiver.

Summer Visiting Students: A letter of permission from the Registrar or other responsible official of the Home University.

Regular Undergraduate McGill Students: A Faculty Authorization Form signed by the Associate Dean of the Faculty. This signature must be secured before the form is brought to the Summer Session Office.

Summer Special Students and Students Admitted Conditionally: A signed Waiver.

Students **must** also pay their fees in full (with the exception of Residence fees which are payable directly to the Residence) at that time. Only bank drafts or money orders *(no cash)* will be accepted.

Personal cheques will NOT be accepted. Please make payments to the order of McGill University, in Canadian funds.

Students expecting some sort of financial assistance must also submit, at registration, a letter from the granting agency outlining the method and date of payment.

Identification cards will be issued to all students, including regular McGill students when they register. These cards are necessary for using library facilities.

Please note that it is necessary to pay for courses as you register. If you prefer to pay for only part of your courses, register only for the first course(s) you wish to attend and enclose the tuition for this (these) course(s)--bank draft or money order. You may then add any additional course(s) for which you have secured authorization and pay for it (them) at any time up to and including the first day of classes for that (those) course(s).

REGISTRATION IN REDPATH HALL

Registration will be held in Redpath Hall on two days: Monday May 10 for Summer Session Part I and Monday, July 5 for Summer Session Part II. Students may register in Redpath Hall at any time convenient to them between 10:00 and 15:00 and from 16:00 — 19:00 Students may attend the 8:00 class of their choice but must register sometime during the day. Students must bring with them:

New Students: A copy (please keep the original for presentation at the September Registration) of the final letter of acceptance from the Admissions Office and a signed Faculty Authorization Form, OR copy of the conditional letter of acceptance from the Admissions Office and a signed Waiver.

Summer Visiting Students: A letter of permission from the Registrar or other responsible official of the Home University.

Regular Undergraduate McGill Students: A Faculty Authorization Form signed by the Associate Dean of the Faculty. This signature must be secured before the form is presented at Redpath Hall.

Summer Special Students and Students Admitted Conditionally: A signed Waiver.

Students must also pay their fees in full (with the exception of Residence fees which are payable directly to the Residence) at that time. Only bank drafts or money orders (no cash) will be accepted. **Personal cheques will NOT be accepted.** Please make payments to the order of McGill University in Canadian Funds.

Students expecting some sort of financial assistance must also submit, at registration, a letter from the granting agency outlining the method and date of payment.

Identification cards will be issued to all students, including regular McGill students when they register. These cards are necessary for using library facilities.

Please note that it is necessary to pay for courses as you register. If you prefer to pay for only part of your courses, register only for the first course(s) you wish to attend and enclose the tuition for this (these) course(s)--bank draft or money order. You may then add any additional course(s) for which you have secured authorization and pay for it (them) at any time up to and including the first day of classes for that (those) course(s).

LATE REGISTRATION

Students will be permitted, in special cases but *only* if space is available, to register up to and including the last day for course changes in the session or "term" they wish to attend. Please consult the calendar of dates for deadlines. These students must register, *in person,* in the Summer Session Office (9:00 — 16:30 Monday to Friday) and must bring, along with the appropriate documentation (please see above), a bank draft or money order (no cash) covering their full fees (with the exception of Residence fees which are payable directly to the Residence). In addition, a Late Registration fee of $10.00 (non-refundable) will be charged. **Personal cheques will NOT be accepted.** Please make payments to the order of McGill University, in Canadian funds.

ADDING A COURSE

Students need *register* in the Summer Session only ONCE. Students wishing to attend a course not listed on their Registration Form at the time of registration must pick up, at the Summer Session Office, a Course Change Approval Form, have it signed by their Associate Dean (Summer Special and Summer Visiting students will be required to sign a Waiver), and return it to the Summer Session Office along with a bank draft or money order to cover payment for that course. As the proper documentation is a necessary part of the "adding a course" process, telephone requests are not acceptable; students must present themselves in person at the Summer Session Office (9:00 — 16:30, Monday to Friday).

FILLING OUT A REGISTRATION FORM

It is imperative that students complete the registration form correctly in every detail. The student's name should be printed clearly and, if applicable, a maiden or secular name stated (in the appropriate section of the form). It is also imperative that the student use his or her name in exactly the same manner as on previous registration forms (e.g. using a middle name if one was used in the past) on all forms he or she fills out during his or her stay at the University.

Students will have, or will be given, a student number which remains the same throughout their attendance at McGill University. Students should be sure of their number and use it on all correspondence and forms, including registration, authorization, and change of course forms.

The remainder of the information required on the registration form is necessary for student records and should be completed in detail. Please do not write in shaded areas and return the white and yellow copies of the registration form. Please be careful when entering the course number and state clearly whether the course is an "L" course or a "C" course. Courses held during Summer Session Part I are "L" courses and those held during Summer Session Part II are "C" courses.

FEES AND RESIDENCE CHARGES

(fees subject to change without notice.)

TUITION FEES

Graduate Courses

Full Course	approximately	$114.00
Half Course		57.00

Undergraduate Courses

All Faculties, including Faculty of Agriculture: $19.00 **per credit**

Technical-Vocational and Business Education Courses

New Program or Individual Courses	
8-credit course	$152.00
6-credit course	114.00
4-credit course or 50 hours	76.00
3-credit course	57.00
2-credit course or 25 hours	38.00

Tuition fees cover the use of laboratories when applicable.

Late Registration Fee (non-refundable)	$10.00

Income Tax receipts will be sent in late February, 1977.

All fees must be paid by bank draft or money order at the time of registration.

Students still owing the University fees and/or fines from previous sessions will not be allowed to register in the Summer Session.

RESIDENCE CHARGES

Room and Board, per week	$90.00

STUDENTS SERVICES FEES (OPTIONAL)

One Session	$10.00
Both Sessions	15.00

COURSE LOAD — SUMMER SESSION

The permissible course load for McGill degree and diploma candidates will be that listed on their Faculty Authorization Forms.

New students admitted conditionally, Summer Visiting and Summer Special Students will be permitted

to attempt no more than seven credits in each Part of the Summer Session.

COURSE CHANGES

Students wishing to change a course must first secure the authorization of their Associate Dean and **then record the change in the Summer Session Office.** Please consult the calendar of dates for the change of course dates in each "term" of each Session. Such changes should not introduce conflicts in the timetable. Summer Visiting and Summer Special students must secure the authorization of the Summer Session Office.

WITHDRAWALS

Students are held responsible for the course (or courses) in which they are registered unless and until they formally withdraw. Simply notifying the Instructor or ceasing to attend lectures does NOT constitute withdrawal. Students MUST withdraw formally, by mail or in person at the Summer Session Office. Telephone notification is not acceptable.

Students Withdrawing (by mail or in person) before the start of classes will receive a total refund of fees and their registration will be cancelled; those withdrawing by the dates listed in the "Refunds" section will also receive a total refund of fees and the course will be crossed off their records. Those withdrawing after the refund deadlines, but before withdrawal deadlines, will receive a letter grade of "W"; no refund will be made.

In the case of withdrawal by mail, the date of receipt in the Summer Session Office will constitute the effective withdrawal date and refunds (if applicable) will be determined by the date of receipt.

The withdrawal deadlines are as follows:

Summer Session Part I

	Tuesday, May 18	Last day to withdraw from half courses (3 cr.)
"Term" 1	Thursday, May 20	Last day to withdraw from 4-credit courses
	Friday, May 21	Last day to withdraw from full courses (6 cr.)
	Tuesday, June 8	Last day to withdraw from half courses (3 cr.)
"Term" 2	Thursday, June 10	Last day to withdraw from 4-credit courses

Summer Session Part II

	Monday, July 12	Last day to withdraw from half courses (3 cr.)
"Term" 1	Wednesday, July 14	Last day to withdraw from 4-credit courses
	Friday, July 16	Last day to withdraw from full courses (6 cr.)
	Tuesday, August 3	Last day to withdraw from half courses (3 cr.)
"Term" 2	Thursday, August 5	Last day to withdraw from 4-credit courses

STUDENTS LIVING IN RESIDENCE MUST VACATE THEIR ROOM WITHIN 12 HOURS OF WITHDRAWING FROM THE SUMMER SESSION.

McGill degree and diploma candidates who wish to withdraw from a course or courses after the deadlines must secure the written permission of the Associate Dean of their Faculty. If permission is granted, the Associate Dean will at that time determine the letter grade to be assigned, i.e. "W" (Withdrew) or "WF" (Withdrew Failing).

A student who has not, without accepted excuse, participated in or written the final examination for a course for which he was registered and from which he did not formally withdraw will be given a letter grade of "J" (Absent).

REFUNDS

Students withdrawing from a course or courses before the start of classes will receive a total refund of their tuition fees; those withdrawing by the dates listed below will also receive a total refund of their tuition fees. No refunds will be made to students withdrawing after the specified dates (no exceptions will be made). This also applies to students receiving financial aid. Please note that the Late Registration fee ($10.00) is non-refundable.

Summer Session Part I -- Last day for refund of tuition fees.

Friday, May 14	First "term" and full courses.
Friday, June 4	Second "term" courses.

Summer Session Part II -- Last day for refund of tuition fees.

Friday, July 9	First "term" and full courses.
Friday, July 30	Second "term" courses.

Tuition fees will be refunded in full should a course be cancelled due to insufficient enrolment.

Refund cheques will be sent to the student's address two or three weeks after receipt of the withdrawal notice, if he is entitled to a refund.

CHANGE OF NAME OR ADDRESS

Students must inform the Summer Session Office of any change of name (e.g. marital status) or address either by telephone or in writing. This will eliminate errors in transcripts and delays in forwarding reports of standing and Income Tax receipts.

REPORTS OF STANDING AND TRANSCRIPTS

A report of standing is an unofficial statement designed to inform the student of the marks received in the courses for which he is registered.

A transcript is an official document showing the student's entire academic record and destined to be sent, upon request only, to universities, school boards and other institutions.

Reports of standing will be sent only to students. Those wishing transcripts of their marks sent to their home university or to a school board *MUST* request these from the Registrar's Office.

Cost — First two copies each $1.00
Additional copies made at the same time, each $.25.

FINAL MARKS

Final marks will NOT be given out by the Summer Session Office either over the telephone or to students enquiring in person.

GRADING SYSTEM

In the summer the G.P.A. (Grade Point Average) and C.G.P.A. (Cumulative Grade Point Average) are calculated *only* for McGill degree and diploma candidates. Following is an explanation of the letter grades used at McGill University.

UNDERGRADUATE LEVEL

A (80 — 100%) B (65 — 79%) C (55 — 64%)	Satisfactory Pass	D (45 - 54%) F P	Conditional Pass Failure Pass.
K	Incomplete	Student has valid reason for not having completed essential term papers or research. Four (4) months granted to complete.	G.P.A. calculation suppressed until course is completed.
KK	Completion not required	Faculty prepared to indefinitely waive the requirement to complete the course, but student may be able to complete the course in future.	Course treated like a "W".
KF	Incomplete-Failed	Failed to meet the extended deadline for submission of work in a course.	Counted as "F" in G.P.A. calculations.
J	Absent	The student is registered but does not write the examination or do other essential work and has no valid reason.	Counted as "F" in G.P.A. calculations.
W	Withdrew	Student drops a course with special permission.	Does not enter into G.P.A. calculations.
WF	Withdrew Failing	Student drops a course with special permission, but the work done to date is on the level of an "F".	Does not enter into G.P.A. calculations.
L	Deferred	Student's final exam has been deferred for reasons such as illness or family affliction at the time of the examination. Approval of Associate Dean of the Student's Faculty is necessary.	G.P.A./C.G.P.A. will not be calculated until "L" is cleared.
L*	Deferred	Permitted to defer the examination for more than the normal period.	G.P.A. calculations identical to that used for L (deferred).

Normally, grades A, B, C are termed satisfactory passes, D a conditional pass and F a failure. Certain courses have been approved for Pass/Fail (P/F) grading.

Although D is a passing grade, it will not permit entry into a subsequent course for which it is a prerequisite, nor will it be recognized if the course is a requisite of the student's program.

GRADUATE LEVEL

A (80 — 100%)	First Class
B (65 — 79%)	Second Class
Below 65%	Failure
K	Incomplete
J	Absent
W	Withdrew
L	Deferred

Prerequisites

It is the responsibility of each student (whether New, Regular, Summer Visiting or Summer Special) to ensure that the prerequisites listed for the course (or courses) for which he intends to register have been completed.

Auditing

Auditing is not permitted in the Summer Session. Instructors will take attendance as soon as classrolls have been distributed; students whose names do not appear on official lists will be asked to leave the classroom. Students who are registered but whose names do not appear on classrolls should contact the Summer Session Office immediately; steps will be taken to ensure their admission to the next class.

Class Tests

Members of the teaching staff may from time to time give class tests if they think them necessary.

Final Examinations

Final examinations are scheduled at the end of each "term" of each session. In some courses there will be no final examinations: standing in these courses will be determined on the basis of course work and class tests. The decision regarding the holding of final examinations rests solely with the Instructor, but final marks must be entered for all registered summer students.

Instructors are not permitted to grant any special treatment regarding examinations to any students. If a student believes there is some circumstance which might be legitimately taken into account in evaluating his performance, he should apply to the Dean or Associate Dean of his Faculty, not to the Summer Session Office. Summer Visiting and Summer Special students should contact the Faculty offering the course.

Excused Absence from Examination

A student who, for reasons such as illness or family affliction, is unable to write final examinations must inform the Associate Dean of his Faculty of the reason for his absence within three days of the examination. If the request is approved, an "L" will appear on the report of standing in the place of a grade and will be replaced by the grade obtained in the deferred examination after it has been written. The Associate Dean will advise the student of the date of the examination(s).

A Visiting student may be allowed to write a deferred examination if suitable arrangements can be made as to a date for the examination and if approval is granted both by the Visiting Student's Home University and the Associate Dean of the Faculty offering the course at McGill. The "L" will be replaced by the grade received in the deferred examination(s).

Reassessment of a Grade

Papers are marked and grades calculated and handled with considerable care. However, if a student wishes his marks checked or his examination paper re-read, he should apply in writing to the Office of the Dean or Associate Dean of his Faculty; not to the Summer Session Office. There is a fee of ten dollars ($10) for a re-read which will be refunded if an error is found in the student's favour. If the result is a lower mark, the lower mark will stand and there will be no refund. Requests for Reassessment of standing in more than one course will not be permitted.

Any request to have term work re-evaluated or a term paper reassessed must be made directly to the Professor concerned. Summer Visiting and Summer Special Students should contact the Faculty offering the course.

English as a Second Language Course

The Summer Session offers an introductory English course (110-150C ENGLISH AS A SECOND LANGUAGE) for the convenience of students who have been accepted to begin their studies in September but who lack fluency in that language. Students whose mother tongue is other than English and who wish to improve their comprehension and reading of the language should avail themselves of the opportunity.

The course consists of two hours of class and one hour of language lab. every morning from Monday to Friday (July 5 — August 13), workshops twice a week, excursions and socio-cultural activities in the afternoon. Open labs. are also available where students can practice on their own.

A placement test is mandatory for all students in this course. This test is not an examination, but merely a way of determining at which level a student should be placed. Testing will be held on two days: Monday, June 28 and Tuesday, June 29. Candidates will be given, when they register, a card indicating the day on which they must present themselves for testing.

N.B.: Students must register **NOT LATER THAN JUNE 25th** for this course. Registration is on a first come, first served basis, and students are advised to register early in order to avoid disappointment (registration is limited). The fee for the course is $114.00 payable by BANK DRAFT or MONEY ORDER at the time of registration. Payments

should be made to the order of "McGill University" in Canadian funds.

Students wishing to take this course but who have not been admitted to McGill will be permitted to register upon signing the Waiver described in the "General Information" section of this Announcement. Students may register by mail or in person; Registration Forms and Waivers are available in the Summer Session Office.

STUDENT SERVICES

RESIDENCES

Residence space will be very limited. Students wishing to live in Residence are encouraged to register as early as possible; proof of registration in the Summer Session will be a prerequisite to admittance to the Residences. Rooms will be allocated on a first come, first served basis in one of three residence buildings; once all rooms have been filled, it will be impossible for us to secure accommodation for our students.

Students who register too late to secure residence accommodation should contact Hébergement Québec at (514) 873-1976. Hébergement Québec is responsible for all rooms to be rented to members of the public in the Montreal area during the period of May 1st to August 31st, 1976.

Students registering in the Summer Session according to the procedures set out in the General Information section of this Announcement will receive an identification card. This card must be shown upon arrival at the Residence in order for a room to be assigned.

The Summer Session will provide Residence Application Forms. Any further arrangements must be made directly with the Residence. The address is as follows: The Manager, Royal Victoria College, 3425 University Street, Montreal, Quebec H3A 2A8. Phone: (514) 392-4613.

PLEASE NOTE: Students withdrawing from the Summer Session must vacate their room in Residence within twelve hours of withdrawal.

Damages to a room or its furnishings will be charged to the student assigned to that room.

All rooms are adequately furnished and residents are provided with a bedspread, sheets, pillow cases and two towels. No room service is provided. Kitchenettes are found in each residence. Residents may also have a radio, phonograph, or other small electrical appliances in their room. Recreational facilities are available.

There are launderettes in each residence. An outside dry cleaning firm also calls regularly at the Residences.

While all care will be taken to provide supervision in the residences, the University cannot be responsible for personal possessions left in students' rooms.

Residence charges are $90.00 a week, room and board. Students *must* pay a deposit of $10.00 one month in advance of arrival; the balance of their residence charges may be paid on arrival. Only *bank drafts* or *money orders* will be accepted. DO **NOT** ENCLOSE TUITION PORTION OF FEES WITH THE RESIDENCE PAYMENT.

Should you seek accommodation, PLEASE CHECK THE APPROPRIATE AREA ON THE SUMMER SESSION REGISTRATION FORM.

Non-resident Summer Session students are invited to take advantage of the à la carte meal service available at Royal Victoria College.

LIBRARIES

Summer students are welcome to make use of the University's library facilities. Following is a list of libraries on campus, including addresses and telephone numbers for general information. Since individual privileges and summer hours of service may vary from library to library, it is wise to check with a library before visiting. Stack access and borrowing privileges are assured in the Undergraduate Library and in McLennan Library, which houses the research collection in Humanities and Social Sciences.

HUMANITIES AND SOCIAL SCIENCES AREA LIBRARY

Blackader-Lauterman Library
Art and Architecture collection
Redpath Library
Tel: 392-5211

Education and Curriculum Lab
Education Building
3700 McTavish St.
Tel: 392-8805

Howard Ross Library
Management
1001 Sherbrooke St.
Tel: 392-5804

Islamic Studies
Leacock Building
Rm. 911
Tel: 392-5197

Library Sciences
McLennan Library
Street Level
Tel: 392-5931

McLennan
McLennan Library
Tel: 392-4936 (Circulation)

Music
(Books, scores, records)
Strathcona Music Building
555 Sherbrooke St. W.
Tel: 392-4530

Physical Education
Currie Gymnasium
475 Pine Avenue W.
Tel: 392-8893

Religious Studies
William & Henry Birks Building
3520 University St.
Tel: 392-4832

Social Work
Wilson Hall
3506 University St.
Tel: 392-5046

LAW AREA LIBRARY

Law
New Chancellor Day Hall
3644 Peel St.
4th Floor
Tel: 392-5067

LIFE SCIENCES AREA LIBRARY

Blacker-Wood Library
Zoology and Ornithology Collection
Redpath Library
Tel: 392-5406

Botany-Genetics
Stewart Biology Building
Rm. S3/1
Tel: 392-5829

Dentistry
Strathcona Anatomy and
Dentistry Building
Main Floor
Tel: 392-4926

Macdonald College Library
Agriculture
Ste. Anne de Bellevue, P.Q.
Tel: 457-6580, ext. 213

Medical
McIntyre Medical Sciences Centre
1200 Pine Avenue W.
3rd Floor
Tel: 392-4334

Nursing
Wilson Hall
3506 University St.
Tel: 392-5027

Osler
History of Medicine collection
McIntyre Medical Building
1200 Pine Avenue W.
3rd Floor
Tel: 392-4329

PHYSICAL SCIENCES/ENGINEERING AREA LIBRARY

Engineering
Macdonald Engineering Building
Tel: 392-5914

Mathematics
Burnside Hall
Rm. 1105
Tel: 392-8273

Physical Sciences
Frank Dawson Adams Building
3450 University St.
Tel: 392-5729

UNDERGRADUATE AREA LIBRARY

Undergraduate Library
Redpath Library
Tel: 392-6776

AFFILIATED LIBRARIES

Allan Memorial Institute (AMI)
Psychiatry collection
1025 Pine Avenue W.
Tel: 842-1251, ext. 269

Geography
Map collection
Burnside Hall
Rm. 524
Tel: 392-5492

Marine Sciences Centre
772 Sherbrooke St. W.
Tel: 392-5723

Meteorology
Burnside Hall
7th Floor
Tel: 392-8237

BOOKSTORE SUMMER SCHEDULE — 1976

The McGill University Bookstore, located in the Bronfman Building, 1001 Sherbrooke Street West, will be open from 10:00 to 16:30 Monday to Friday. The Bookstore is closed on Saturdays.

PARKING REGULATIONS

A limited number of Summer Session students will be allowed to park in predesignated areas providing they pay the normal rates and abide by the rules and regulations. Parking permits may be obtained at the Parking Office which is located at 840 McGregor, on May 10 and June 1 from 13:00 to 16:30. On the mornings of July 5 and July 27 permits may be obtained at the Education Building, located at 3700 McTavish in the main foyer.

McGill University does not accept liability for damage to or theft of a vehicle or its contents while on the University's property.

OPTIONAL STUDENT SERVICES AVAILABLE TO SUMMER SESSION VISITING AND SPECIAL STUDENTS.

McGill students who have validated I.D. cards from the 1975-76 fall and winter sessions have access to the following student services as part of their registration for 1975-76.

All other students will be welcome to use the following facilities during their summer stay. Membership will be on a *VOLUNTARY* basis. A fee of $10.00 for one Session (6 weeks) or $15.00 for both Sessions (12 weeks) will entitle students to the following services:

CHAPLAINCY SERVICE

A counselling service is available through the campus chaplains independent of McGill administration. This service exists to serve the needs of all students such as marriage counselling, value systems and group dynamics. Open meetings on a variety of religious and campus topics are regularly sponsored by the Chaplains.

At 3484 Peel Street there is a lounge and reading area where books and periodicals are available to students free of charge. Information concerning individual denominational services is available.

Location:	3484 Peel St.
General Information:	392-5890

STUDENT COUNSELLING SERVICE

This office provides a place where students of all faculties may discuss any problem confidentially. Among the services offered are individual counselling, human awareness groups, psychological assessment, vocational testing, effective reading courses, career planning and the Career Information Library.

Location:	522 Pine Avenue West
General Information:	392-5119

STUDENT AID & FOREIGN STUDENT ADVISER OFFICE

The Student Aid section of this office handles all matters relating to financial assistance whether University, Provincial or Federal. Non-Canadian students requiring certification of registration and/or letters of advice to Foreign Exchange Control Boards obtain these from this office.

The Foreign Student Adviser section of this office deals with all matters which may affect non-Canadian students such as problems with the Canadian Department of Manpower and Immigration and information concerning the necessity of the compulsory health insurance.

Location:	3465 Peel St.
General Information:	392-5256

HEALTH SERVICE

Medical clinics operate daily, five days a week from 9:00 to 17:00. A physician is always on call at night and on weekends and he can be contacted by dialing the Health Service number. There are both male and female physicians on staff as well as a competent staff of college health nurses. Students are asked to bring their Medicare cards or equivalent. All information is completely confidential and forms no part of any "University record".

Many students are seen for discussion about sexual life, contraception, drug problems and venereal disease. We urge students who suspect that they have V.D. to consult us. We invite students who are concerned about a drug problem to contact the Health Service and most particularly the Mental Health Section.

In order to ensure medical coverage while a student is at McGill, Canadian students from provinces other than Quebec are advised to consult with the medicare and hospital insurance offices of their own province before coming to McGill. This is particularly important since residents of other provinces are not covered by Quebec Medicare and Hospitalization while studying at McGill.

Location:	517 Pine Avenue West
Appointment and General Office	392-5441
Mental Health Section	392-5449
Location:	Macdonald College
Appointment and General Office	457-6581

OFF-CAMPUS HOUSING SERVICE

This service operates on a year-round basis. Up-to-date listings of various types of accommodation in the downtown area and surrounding suburbs on bus and metro routes are maintained with the use of McGill computers. The service also attempts to accommodate English-speaking students wishing to live with French-speaking families and vice-versa. Students wishing to make use of the service are asked to apply in person.

Location:	3465 Peel St.
General Information:	392-4554

STUDENT PLACEMENT

The Canada Manpower Centre provides a comprehensive placement service to McGill students in the areas of part-time, summer and permanent employment. The principal aims of the service are to encourage employers to make available a wide variety of job opportunities to McGill students; to assist students in finding suitable employment, by providing information on the labour market and arranging interviews with prospective employers; to encourage students to prepare for a career by doing their own research into the labour market, through library facilities, films, seminars, plant visits, summer and part-time jobs.

Location: 762 Sherbrooke St. W.
General Information: 283-4411

ATHLETICS

The facilities of the Currie Gymnasium have been reserved by the Olympic Games Organizing Committee; as a result, summer students will not be able to make use of the gymnasium. Some of the facilities may be available for the duration of Summer Session Part I (May 10 — June 18) but none will be available during Summer Session Part II (July 5 — August 13) with the possible exception of the swimming pool which may reopen to the students after the Olympic Games end on August 2 and until August 13.

Students desiring further information should contact the Athletics Office at 392-4725 and not the Summer Session Office.

CALENDRIER — 1976

Session d'été — Première Partie

Lundi 10 mai	Inscription aux deux "semestres" et aux cours complets de la Session d'été, Première partie. Pavillon Redpath de 10h à 15h et de 16h à 19h.
Lundi 10 mai	Début des cours: premier "semestre" et cours complets.
Mercredit 12 mai	Dernier jour pour les changements de cours (demi cours).
Mercredi 12 mai	Dernier jour pour les inscriptions tardives aux cours du premier "semestre". Frais d'inscription tardive de $10 (non remboursables) exigés après le 10 mai.
Vendredi 14 mai	Dernier jour pour les changements de cours (cours complets).
Vendredi 14 mai	Dernier jour pour les inscriptions tardives aux cours complets. Frais d'inscription tardive de $10 (non remboursables) exigés après le 10 mai.
Vendredi 14 mai	Dernier jour pour les remboursements (premier "semestre" et cours complets).
Mardi 18 mai	Dernier jour pour les retraits (W) — demi cours (3 crédits). Aucun remboursement après le 14 mai.
Jeudi 20 mai	Dernier jour pour les retraits (W) — cours de 4 crédits. Aucun remboursement après le 14 mai.
Vendredi 21 mai	Dernier jour pour les retraits (W) — cours complets (6 crédits). Aucun remboursement après le 14 mai.
Lundi 24 mai	Fête de la reine. Bureaux fermés. Pas de cours.
Vendredi 28 mai	Fin des cours du premier "semestre".
Lundi 31 mai	Examens finals pour les cours du premier "semestre".
Lundi 7 juin	**Dernier jour pour la présentation au bureau de la session d'été des notes finales pour les cours du premier "semestre".**
Mardi 1er juin	Début des cours du deuxième "semestre".
Jeudi 3 juin	Dernier jour pour les changements de cours (cours du deuxième "semestre").
Jeudi 3 juin	Dernier jour pour les inscriptions tardives aux cours du deuxième "semestre". Frais d'inscription tardive de $10 (non remboursables) exigés après le 1er juin.
Vendredi 4 juin	Dernier jour pour les remboursements (cours du deuxième "semestre").
Mardi 8 juin	Dernier jour pour les retraits (W) — cours de 3 crédits (deuxième "semestre"). Aucun remboursement après le 4 juin.
Jeudi 10 juin	Dernier jour pour les retraits (W) — cours de 4 crédits (deuxième "semestre"). Aucun remboursement après le 4 juin.
Vendredi 18 juin	Clôture des classes.
Lundi 21 juin	Examens finals: deuxième "semestre" et cours complets.
Jeudi 24 juin	Fête de la Saint-Jean-Baptiste. Bureaux fermés.
Lundi 28 juin	**Dernier jour pour la présentation au bureau de la session d'été des notes finales pour les cours du deuxième "semestre" et les cours complets.**

CALENDRIER — 1976

Session d'été — Deuxième Partie

Jeudi 1er juillet	Fête de la Confédération. Bureaux fermés.
Lundi 5 juillet	Inscription à la deuxième partie de la Session d'été pour les deux "semestres" et les cours complets. Pavillon Redpath de 10h à 15h et de 16h à 19h.
Lundi 5 juillet	Début des cours (premier "semestre" et cours complets).
Mercredi 7 juillet	Dernier jour pour les changements de cours (demi cours).
Mercredi 7 juillet	Dernier jour pour les inscriptions tardives aux cours du premier "semestre". Frais d'inscription tardive de $10 (non remboursables) exigés après le 5 juillet.
Vendredi 9 juillet	Dernier jour pour les remboursements (premier "semestre" et cours complets).
Vendredi 9 juillet	Dernier jour pour les changements de cours (cours complets).
Vendredi 9 juillet	Dernier jour pour les inscriptions tardives (cours complets). Frais d'inscription tardive de $10 (non remboursables) exigés après le 5 juillet.
Lundi 12 juillet	Dernier jour pour les retraits (W) — demi cours (3 crédits). Aucun remboursement après le 9 juillet.
Mercredi 14 juillet	Dernier jour pour les retraits (W) — cours de 4 crédits. Aucun remboursement après le 9 juillet.
Vendredi 16 juillet	Dernier jour pour les retraits (W) — cours complets (6 crédits). Aucun remboursement après le 9 juillet.
Vendredi 23 juillet	Fin des cours du premier "semestre".
Lundi 26 juillet	Examens finals pour les cours du premier "semestre".
Lundi 2 août	**Dernier jour pour la présentation au bureau de la session d'été des notes finales pour les cours du premier "semestre".**
Mardi 27 juillet	Début des cours du deuxième "semestre".
Jeudi 29 juillet	Dernier jour pour les changements de cours (cours du deuxième "semestre").
Jeudi 29 juillet	Dernier jour pour les inscriptions tardives aux cours du deuxième "semestre". Frais d'inscription tardive de $10 (non remboursables) exigés après le 27 juillet.
Vendredi 30 juillet	Dernier jour pour les remboursements (deuxième "semestre").
Mardi 3 août	Dernier jour pour les retraits (W) — cours de 3 crédits (deuxième "semestre"). Aucun remboursement après le 30 juillet.
Jeudi 5 août	Dernier jour pour les retraits (W) — cours de 4 crédits (deuxième "semestre"). Aucun remboursement après le 30 juillet.
Vendredi 13 août	Fin des classes.
Lundi 16 août	**Examens finals (deuxième "semestre" et cours complets).**
Lundi 23 août	**Dernier jour pour la présentation au bureau de la session d'été des notes finales pour le deuxième "semestre" et les cours complets.**

A l'intention des étudiants des facultés des Arts et des Sciences: Les examens de reprise pour les cours des semestres d'automne et d'hiver 1975-76 vont empiéter sur la dernière semaine de la Session d'été — deuxième partie. Les étudiants qui doivent subir des examens de reprise en août devraient consulter l'horaire de ces examens **avant** de s'inscrire à la Session d'été — deuxième partie.

2 RENSEIGNEMENTS GENERAUX

La Session d'été comprend deux parties: la 1ère partie se tiendra du 10 mai au 18 juin et la IIème partie du 5 juillet au 13 août. En outre, chaque session se divise en deux "semestres" afin d'établir une distinction entre les cours complets (6 crédits) qui couvriront la période de six semaines et les demi-cours (3 crédits) qui couvriront, règle générale, trois semaines. La date à laquelle commence chaque "semestre" est au calendrier qui se trouve au début de cet annuaire.

Certains cours pourront être offerts avant le 10 mai et d'autres se prolonger après les périodes normales de trois ou six semaines; prière de consulter les rubriques appropriées de cet annuaire pour connaître les dates exactes.

Les cours sont donnés du lundi au vendredi inclusivement, sauf avis contraire; certains cours pourront être offerts un jour sur deux.

L'École française d'été et le Centre d'éducation permanente offriront d'autres cours qui ne relèvent pas de la Session d'été. Les personnes intéressées à ces programmes particuliers sont priées de s'adresser aux bureaux de l'École ou du Centre en question.

Toute demande de renseignements concernant les cours d'études supérieures devra être adressée comme suit: Faculty of Graduate Studies and Research, McGill University, P.O. Box 6070, Station A", Montréal, Québec H3C 3G1. Téléphone (514) 392-5092.

Les étudiants désirant s'inscrire aux études supérieures *en Éducation* devront consulter la rubrique consacrée à la faculté d'Éducation.

Les étudiants qui envisagent de suivre des cours à la faculté d'Agriculture devront consulter la rubrique consacrée à cette faculté.

Les différentes formules utilisées par la Session d'été sont les suivantes:

Summer Session Registration Form (Formule d'inscription à la Session d'été): à remplir par TOUS les étudiants (réguliers, nouveaux, visiteurs, spéciaux). Les étudiants diplômés doivent remplir la formule d'inscription à la Session d'été de la Faculté des études supérieures et de la recherche. NE PAS SOUMETTRE PLUS D'UNE FORMULE D'INSCRIPTION. Ceux qui désirent ajouter, changer ou abandonner un ou plusieurs cours après leur inscription initiale doivent remplir une "Formule de changement de cours".

Faculty Authorization Form (Autorisation de la faculté): à soumettre à la signature du vice-doyen et à présenter par TOUS les étudiants du premier cycle déjà inscrits à un programme menant à un grade ou à un diplôme de McGill, et ceux en possession de leur lettre finale. On pourra se procurer cette formule en s'adressant au bureau de la Session d'été ou à celui de la faculté où l'étudiant est inscrit ou s'inscrira. La signature du vice-doyen doit être obtenue avant que la formule ne soit soumise au bureau de la Session d'été.

Course Change Approval Form (Changement de cours): à remplir par TOUS les étudiants qui désirent changer un ou plusieurs cours. On doit se procurer cette formule au bureau de la Session d'été, la faire signer par son vice-doyen et la retourner au bureau de la Session d'été. Les étudiants spéciaux d'été et les visiteurs doivent recevoir l'approbation du bureau de la Session d'été.

Course Withdrawal Form (Retraits): à soumettre par TOUS les étudiants qui désirent se retirer d'un ou de plusieurs cours. Cette formule peut être obtenue au bureau de la Session d'été.

Waiver (Déclaration): à remplir UNIQUEMENT par les étudiants spéciaux d'été, les nouveaux étudiants admis à McGill sous certaines conditions et les étudiants dont le rendement à McGill a été jugé "non satisfaisant". Cette formule est destinée à dégager l'université McGill de l'obligation de reconnaître les crédits envers l'obtention d'un grade ou d'un diplôme. On peut se procurer cette formule au bureau de la Session d'été.

Letter of Permission (Permission): à soumettre par les étudiants visiteurs et précisant le nombre de crédits ou de cours qu'ils peuvent suivre à la Session d'été de McGill. Cette lettre doit être signée par le registraire ou autre responsable de l'université d'attache de l'étudiant visiteur.

Residence Application Form (Demande de logement en résidence): à remplir par les étudiants qui désirent habiter en résidence pour la durée de leurs études d'été.

Nous soulignons **qu'il n'y a pas de formule de demande d'admission à la Session d'été.** Les candidats doivent faire leur demande par lettre, par téléphone ou en personne, mais ils ne seront **inscrits** que sur présentation des pièces justificatives figurant aux rubriques ci-dessous. Les étudiants diplômés doivent s'adresser directement à la Faculté des études supérieures et de la recherche.

CATEGORIES D'ÉTUDIANTS

ÉTUDIANTS NOUVELLEMENT ADMIS A McGILL

Acceptation conditionnelle: Les étudiants admis à McGill sous certaines conditions sont tenus de signer une déclaration dégageant l'Université de l'obligation d'accorder des crédits envers un grade ou un diplôme pour le travail accompli au cours de l'été. Le fait de signer cette déclaration n'est pas une garantie d'admission à McGill.

L'inscription en tant qu'étudiant spécial pour la Session d'été d'un étudiant ayant reçu une admission conditionelle sera changée afin de refléter l'inscription à la faculté dans laquelle l'étudiant a été admis, dès que la décision finale aura été rendue. Autrement dit, les crédits accumulés au cours de l'été seront normalement comptés comme faisant partie du programme *si* l'étudiant *est* accepté définitivement.

Acceptation définitive: Les étudiants qui sont en possession de leur lettre d'acceptation définitive seront tenus de présenter une formule d'autorisation signée par le vice-doyen de la faculté à laquelle ils ont été admis. En vue de solliciter la signature du vice-doyen, ils devront soumettre une copie de leurs relevés de notes les plus récents. Cette signature doit être obtenue avant que la formule ne soit soumise au bureau de la Session d'été.

ÉTUDIANTS DE McGILL

Avant de s'inscrire à la Session d'été, les étudiants réguliers du premier cycle de McGill devront faire signer une formule d'autorisation par le vice-doyen de la faculté où ils sont inscrits. Cette démarche relève de la responsabilité de l'étudiant; la formule d'autorisation signée par le vice-doyen doit être accompagnée d'une formule d'inscription remplie par l'étudiant ainsi que d'une traite bancaire ou mandat. Pour être complétée, l'inscription devra se faire avant les dates limites spécifiées dans cet annuaire. La possession d'une formule d'inscription signée ne garantit nullement l'admission après les dates limites. Les étudiants qui négligent d'obtenir la signature de leur vice-doyen avant les dates limites d'inscription seront tenus de payer les frais d'inscription tardive et ne seront pas autorisés à signer une Déclaration, même sur une base temporaire.

Les enseignants inscrits à la faculté d'éducation pour des programmes à temps partiel (autres que ceux des études supérieures) devront obtenir la signature du directeur du programme qu'ils désirent suivre.

Permission d'inscription à la 1ère partie:

L'étudiant devra avoir obtenu la permission de s'inscrire à la 1ère partie de la Session d'été avant l'expédition des bulletins de la session précédente. La permission de s'inscrire aux cours d'été n'indique pas une décision par la faculté quant à la situation académique de l'étudiant. Les étudiants dont le bulletin de juin indique que leur rendement en 1975-1976 était "non satisfaisant" seront autorisés à terminer les cours d'été auxquels ils se sont inscrits, mais ils seront considérés comme étudiants spéciaux pour la Session d'été. La réussite aux cours d'été ne garantit pas la réadmission en septembre des étudiants dont les bulletins de juin indiquent un rendement "non satisfaisant".

Permission d'inscription à la IIème partie:

Les étudiants qui désirent s'inscrire à la Session d'été après avoir reçu un bulletin de notes indiquant un rendement "non satisfaisant" seront tenus de signer une déclaration qui les placera dans la catégorie d'étudiants spéciaux pour la Session d'été. La réussite aux cours d'été ne garantit pas la réadmission en septembre de ces étudiants.

Les étudiants diplômés doivent s'adresser à la Faculté des études supérieures et de la recherche pour connaître les dates limites et obtenir les signatures officielles et les formules d'inscription.

ÉTUDIANTS VISITEURS — SESSION D'ÉTÉ

Un étudiant d'une autre université peut suivre à McGill un ou plusieurs cours d'été à être crédité(s) à son université d'attache à condition de présenter une lettre signée par le registraire ou autre responsable de son université. Cette lettre devra préciser le nombre de crédits et/ou de cours que l'étudiant est autorisé à suivre. Il est recommandé de ne pas essayer d'obtenir plus de sept crédits à chacune des deux Sessions d'été.

ÉTUDIANTS SPÉCIAUX — SESSION D'ÉTÉ

Dans certaines circonstances, les étudiants qui ne postulent pas un grade ou un diplôme de McGill ou d'ailleurs pourront être autorisés à s'inscrire à un cours offert par la Session d'été sans avoir été admis au préalable à l'université, sous réserve de répondre aux prérequis du cours. Ces étudiants seront tenus de signer la déclaration.

INSCRIPTION

Les inscriptions sont traitées dans l'ordre dans lequel elles sont reçues. Puisque certains cours n'admettent qu'un nombre limité d'étudiants, vous avez intérêt à vous inscrire de bonne heure afin d'éviter des déceptions.

Le bureau de la Session d'été offre trois choix aux étudiants autres que ceux qui s'inscrivent à la Faculté des études supérieures et de la recherche: inscription par lettre, inscription en personne au bureau de la Session d'été et inscription en personne au Pavillon Redpath. Les étudiants diplômés sont priés de se renseigner sur les formalités d'inscription en s'adressant à la Faculté des études supérieures et de la recherche.

Au Pavillon Redpath, les inscriptions se feront le premier jour de la Session d'été — 1ère partie (soit le 10 mai) et le premier jour de la Session d'été — IIème partie (soit le 5 juillet). Les étudiants pourront s'inscrire en personne au bureau de la Session d'été (ouvert du lundi au vendredi, de 9h à 16h 30) jusqu'à la veille du jour où débute la Session. Ceux qui désirent s'inscrire le 10 mai ou le 5 juillet devront se présenter au Pavillon Redpath.

Les étudiants qui s'inscrivent en personne au deuxième "semestre" de chaque session pourront

se présenter au bureau de la Session d'été jusqu'au jour du début des classes (y compris le 1er juin ou le 27 juillet) du lundi au vendredi de 9h à 16h 30.

Prière de noter qu'il ne faut remplir QU'UNE SEULE formule d'inscription à la Session d'été. Les étudiants qui s'inscrivent à un cours et décident par la suite d'en suivre un autre *ne doivent pas* remplir une deuxième formule d'inscription mais la formule de changement de cours décrite ci-dessus.

INSCRIPTION PAR LA POSTE

Les étudiants qui s'inscrivent par la poste doivent soumettre les pièces justificatives exigées au moins une semaine avant le début de la Session ou du "semestre" qu'ils désirent suivre. On trouvera ci-joint une formule d'inscription qui doit être renvoyée accompagnée des pièces correspondantes énumérées ci-dessous.

Nouveaux étudiants: Une copie (prière de conserver l'original qui doit être présenté lors de l'inscription en septembre) de la lettre d'admission définitive émise par le bureau des admissions ainsi qu'une formule d'autorisation signée par le vice-doyen *OU* une copie de la lettre d'admission conditionnelle émise par le bureau des admissions et une déclaration signée par l'étudiant.

Étudiants visiteurs — Session d'été: Une lettre de permission émise par le registraire ou autre responsable de votre université d'attache.

Étudiants réguliers du premier cycle de McGill: Une formule d'autorisation signée par le vice-doyen de la faculté. Il faudra obtenir cette signature avant d'adresser la formule au bureau de la Session d'été.

Étudiants spéciaux — Session d'été et étudiants admis sous conditions: Une déclaration signée.

Les pièces justificatives DOIVENT être accompagnées d'une traite bancaire ou d'un mandat (ne pas envoyer d'espèces) en règlement de la totalité des frais de scolarité (à l'exception des frais de résidence qui sont payables directement à la résidence). Les étudiants qui omettent d'inclure une traite bancaire ou un mandat ne seront pas inscrits. **Les chèques personnels seront renvoyés à l'expéditeur** et les formalités d'inscription ne seront pas complétées. Prière d'établir les traites ou mandats en monnaie canadienne et payables à l'ordre de l'Université McGill.

Les étudiants qui s'attendent à recevoir une aide financière doivent également soumettre, en même temps que la formule d'inscription et les pièces justificatives, une lettre de l'organisme d'assistance indiquant le mode et la date de paiement.

Des cartes d'identité seront adressées aux étudiants inscrits y compris les étudiants réguliers de McGill. Il n'y aura pas de lettres d'acceptation; la carte d'identité constitue un avis d'acceptation et il faudra présenter cette pièce pour avoir droit aux services des bibliothèques.

Les cartes d'identité ne seront pas adressées aux étudiants dont les pièces justificatives parviennent au bureau de la Session d'été moins d'une semaine avant le début de la Session ou du "semestre" qu'ils désirent suivre. Ces étudiants pourront obtenir leurs cartes en se présentant au bureau de la Session d'été.

Prière de noter que les frais de scolarité devront être acquittés au moment de l'inscription. Ceux qui préfèrent ne régler qu'une partie des cours devront s'inscrire seulement au(x) premier(s) cours qu'ils désirent suivre et ne régler que ce(s) cours — toujours par traite bancaire ou mandat. Ils pourront ensuite ajouter tout autre cours pour lequel ils détiennent une autorisation et acquitter les frais au plus tard le premier jour des classes.

INSCRIPTION AU BUREAU DE LA SESSION D'ÉTÉ

Les étudiants peuvent s'inscrire en se présentant au bureau de la Session d'été à l'heure qui leur convient entre 9h et 16h 30 du lundi au vendredi sauf le 10 mai et le 5 juillet où les inscriptions ne seront acceptées qu'au Pavillon Redpath. Les candidats doivent apporter avec eux la formule d'inscription ci-jointe ainsi que les pièces correspondantes énumérées ci-dessous.

Nouveaux étudiants: Une copie (prière de conserver l'original qui doit être présenté lors de l'inscription en septembre) de la lettre d'admission définitive émise par le bureau des admissions ainsi qu'une formule d'autorisation signée par le vice-doyen *OU* une copie de la lettre d'admission conditionnelle émise par le bureau des admissions et une déclaration signée par l'étudiant.

Étudiants visiteurs — Session d'été: Une lettre de permission émise par le registraire ou autre responsable de votre université d'attache.

Étudiants réguliers du premier cycle de McGill: Une formule d'autorisation signée par le vice-doyen de la faculté. Il faudra obtenir cette signature avant d'adresser la formule au bureau de la Session d'été.

Étudiants spéciaux — Session d'été et étudiants admis sous conditions: Une déclaration signée.

Les pièces justificatives DOIVENT être accompagnées d'une traite bancaire ou d'un mandat (ne pas apporter d'espèces) en règlement de la totalité des frais de scolarité (à l'exception des frais de résidence qui sont payables directement à la résidence). **Les chèques personnels ne sont pas acceptés.** Prière d'établir les traites ou mandats en monnaie canadienne et payables à l'ordre de l'Université McGill.

Les étudiants qui s'attendent à recevoir une aide financière doivent également soumettre, en même

temps que la formule d'inscription et les pièces justificatives, une lettre de l'organisme d'assistance indiquant le mode et la date de paiement.

Des cartes d'identité seront émises aux étudiants inscrits y compris les étudiants réguliers de McGill. Il faudra présenter sa carte d'identité pour avoir droit aux services des bibliothèques.

Prière de noter que les frais de scolarité doivent être acquittés au moment de l'inscription. Ceux qui préfèrent ne régler qu'une partie des cours devront s'inscrire seulement au(x) premier(s) cours qu'ils désirent suivre et ne régler que ce(s) cours — toujours par traite bancaire ou mandat. Ils pourront ensuite ajouter tout autre cours pour lequel ils détiennent une autorisation et acquitter les frais de scolarité au plus tard le premier jour des classes.

INSCRIPTION AU PAVILLON REDPATH

Deux journées d'inscription seront tenues au Pavillon Redpath: le lundi 10 mai pour la 1ère partie et le lundi 5 juillet pour la IIème partie de la Session d'été, entre 10h et 15h et entre 16h et 19h. Les étudiants pourront assister à la classe de leur choix tenue à 8h, mais devront s'inscrire à une heure qui leur convient pendant la journée. Les candidats doivent apporter avec eux la formule d'inscription ci-jointe ainsi que les pièces correspondantes énumérées ci-dessous.

Nouveaux étudiants: Une copie (prière de conserver l'original qui doit être présenté lors de l'inscription en septembre) de la lettre d'admission définitive émise par le bureau des admissions ainsi qu'une formule d'autorisation de la faculté *OU* une copie de la lettre d'admission conditionnelle émise par le bureau des admissions et une déclaration signée par l'étudiant.

Étudiants visiteurs — Session d'été: Une lettre de permission émise par le registraire ou autre responsable de votre université d'attache.

Étudiants réguliers du premier cycle de McGill: Une formule d'autorisation signée par le vice-doyen de la faculté. Il faudra obtenir cette signature avant de présenter la formule au Pavillon Redpath.

Étudiants spéciaux — Session d'été et étudiants admis sous condition: Une déclaration signée.

Les pièces justificatives DOIVENT être accompagnées d'une traite bancaire ou d'un mandat (ne pas apporter d'espèces) en règlement de la totalité des frais de scolarité (à l'exception des droits de résidence qui sont payables directement à la résidence). **Les chèques personnels ne sont pas acceptés.** Prière d'établir les traites ou mandats en monnaie canadienne et payables à l'ordre de l'Université McGill.

Les étudiants qui s'attendent à recevoir une aide financière doivent également soumettre, en même temps que la formule d'inscription et les pièces justificatives, une lettre de l'organisme d'assistance indiquant le mode et la date de paiement.

Des cartes d'identité seront émises à tous les étudiants inscrits y compris les étudiants réguliers de McGill. Il faudra présenter sa carte d'identité pour avoir droit aux services des bibliothèques.

Prière de noter que les frais de scolarité doivent être acquittés au moment de l'inscription. Ceux qui préfèrent ne régler qu'une partie des cours devront s'inscrire seulement au(x) premier(s) cours qu'ils désirent suivre et ne régler que ce(s) cours — toujours par traite bancaire ou mandat. Ils pourront ensuite ajouter tout autre cours pour lequel ils détiennent une autorisation et acquitter les frais de scolarité au plus tard le premier jour des classes.

INSCRIPTION TARDIVE

Dans des cas particuliers, mais *seulement* s'il y a des places disponibles, les étudiants seront autorisés à s'inscrire et ce au plus tard le dernier jour fixé pour les changements de cours de la Session ou du "semestre" qu'ils désirent suivre. Prière de consulter le calendrier qui indique les dates limites. Ces étudiants devront s'inscrire *en personne* en se présentant au bureau de la Session d'été (de 9h à 16h 30 du lundi au vendredi) et apporter, en plus des pièces justificatives exigées (voir ci-dessus) une traite bancaire ou un mandat (ne pas apporter d'espèces) en règlement de la totalité des frais de scolarité (à l'exception des droits de résidence qui sont payables directement à la résidence). Ils devront acquitter en outre des frais d'inscription tardive de $10 qui ne sont pas remboursables. **Les chèques personnels ne seront pas acceptés.** Prière d'établir les traites ou mandats en monnaie canadienne et payables à l'ordre de l'Université McGill.

ADDITION D'UN COURS

Les étudiants doivent *s'inscrire* UNE SEULE FOIS à la Session d'été. Ceux qui désirent suivre un cours non mentionné sur leur formule au moment de l'inscription devront se procurer au bureau de la Session d'été une formule de changement de cours, la faire signer par leur vice-doyen (les étudiants spéciaux d'été et les visiteurs seront tenus de signer une déclaration) et la retourner au bureau de la Session d'été, accompagnée d'une traite bancaire ou d'un mandat en règlement des frais de scolarité pour le cours. Étant donné que des pièces justificatives sont exigées pour l'addition d'un cours, les demandes par téléphone ne sont pas acceptables; les étudiants devront donc se présenter au bureau de la Session d'été (de 9h à 16h 30, du lundi au vendredi).

COMMENT REMPLIR UNE FORMULE D'INSCRIPTION

Il est essentiel que la formule d'inscription soit remplie correctement et dans le moindre détail. Le nom de l'étudiant(e) doit apparaître en lettres majus-

cules et lisibles, ainsi que le nom de jeune fille (pour une femme mariée) ou le nom séculier (à la rubrique réservée à cette fin). Il est non moins essentiel que l'étudiant(e) s'inscrive exactement de la même façon à chaque fois qu'il (elle) remplit une formule d'inscription; par exemple, il ne faut pas indiquer les prénoms au complet si vous n'avez employé que des initiales ultérieurement, et vice-versa.

Chaque étudiant(e) aura ou se verra accorder un numéro de matricule qui restera le même pendant toutes ses études à l'université McGill. L'étudiant(e) devra être sûr(e) de ce numéro et l'indiquer sur toutes ses lettres et formules, y compris les formules d'inscription, d'autorisation et de changement de cours.

Les autres renseignements demandés par la formule d'inscription serviront à compléter le dossier de l'étudiant(e) et devront être fournis en détail. Les candidats sont priés de ne rien inscrire dans les espaces ombrés et de nous retourner les exemplaires blanc et jaune.

Veuillez inscrire avec soin le numéro du cours et indiquer clairement si le cours est un cours "L" ou un cours "C".

Les cours de la Session d'été — première partie sont des cours "L" et ceux de la Session d'été — deuxième partie sont des cours "C".

FRAIS DE SCOLARITÉ

(sujets à modification sans préavis)

Études supérieures

Cours complet	environ	$114.00
Demi-cours		57.00

Études du premier cycle

Toutes les facultés, y compris la Faculté d'Agriculture $19.00 **par crédit**

Cours de formation technique — professionnelle et commerciale (Technical-Vocational and Business Education)

Nouveau programme ou cours individuels	
Cours de 8 crédits	$152.00
Cours de 6 crédits	114.00
Cours de 4 crédits (ou 50 heures)	76.00
Cours de 3 crédits	57.00
Cours de 2 crédits (ou 25 heures)	38.00

Les frais de scolarité comprennent, le cas échéant, le droit d'accès aux laboratoires.

Droits d'inscription tardive (non remboursables)	$10.00

Des reçus destinés aux déclarations d'impôt sur le revenu seront envoyés à la fin de février 1977.

Tous les frais de scolarité doivent être acquittés par traite bancaire ou mandat au moment de l'inscription.

Les étudiants qui doivent encore à McGill des frais de scolarité ou pénalités suite à des inscriptions préalables ne seront pas autorisés à s'inscrire à la Session d'été.

Frais de résidence

Chambre et pension (par semaine)	$90.00

Services aux étudiants (facultatif)

Une session	$10.00
Les deux sessions	15.00

Nombre maximum de cours — Session d'été

Le nombre maximum de cours que le postulant d'un grade ou d'un diplôme de McGill est autorisé à suivre est celui qui figure à la formule d'autorisation émise par sa faculté.

Les étudiants admis sous conditions, les étudiants visiteurs et spéciaux ne seront pas autorisés à accumuler plus de sept crédits à chacune des deux parties de la Session d'été.

Changements de cours

Les étudiants qui désirent changer un cours doivent d'abord obtenir l'autorisation de leur vice-doyen et ensuite faire inscrire le changement au bureau de la Session d'été. Prière de consulter le calendrier indiquant les dates de changement de cours pendant chaque "semestre". Les changements en question ne devront pas créer des conflits d'horaires.

Les étudiants visiteurs et spéciaux d'été devront obtenir l'autorisation du bureau de la Session d'été.

RETRAITS

Les étudiants sont tenus responsables du cours (ou des cours) au(x) quel(s) ils sont inscrits à moins qu'ils ne se soient officiellement retirés du (des) cours en question. Le fait d'informer le professeur ou de cesser de se présenter en classe ne constitue PAS un retrait. Les étudiants DOIVENT se retirer officiellement en adressant une lettre ou en se présentant eux-mêmes au bureau de la Session d'été. Il ne sera pas donné suite aux avis communiqués par téléphone.

Les étudiants qui se retirent (par lettre ou en personne) avant le début des classes recevront le remboursement total des frais de scolarité déjà acquittés et leur inscription sera annulée; ceux qui se retirent aux dates énumérées à la rubrique "Remboursements" recevront aussi un remboursement total des frais de scolarité déjà acquités et le cours sera éliminé de leur dossier. Ceux qui se retirent après les dates limites pour un remboursement recevront la note "W"; aucun remboursement ne sera accordé.

Lorsqu'il s'agit d'un retrait signifié par lettre, la date de réception de la lettre au bureau de la Session d'été constituera la data effective du retrait et le remboursement éventuel sera déterminé d'après cette date:

Les dates limites pour les retraits sont les suivantes:

Session d'été — première partie

"Semestre" 1	mardi 18 mai	Dernier jour pour se retirer d'un demi-cours (3 cr.)
	jeudi 20 mai	Dernier jour pour se retirer d'un cours de 4 crédits
	vendredi 21 mai	Dernier jour pour se retirer d'un cours complet (6 cr.)
"Semestre" 2	mardi 8 juin	Dernier jour pour se retirer d'un demi-cours (3 cr.)
	jeudi 10 juin	Dernier jour pour se retirer d'un cours de 4 crédits

Session d'été — deuxième partie

"Semestre" 1	lundi 12 juillet	Dernier jour pour se retirer d'un demi-cours (3 cr.)
	mercredi 14 juillet	Dernier jour pour se retirer d'un cours de 4 crédits
	vendredi 16 juillet	Dernier jour pour se retirer d'un cours complet (6 cr.)
"Semestre" 2	mardi 3 août	Dernier jour pour se retirer d'un demi-cours (3 cr.)
	jeudi 5 août	Dernier jour pour se retirer d'un cours de 4 crédits

N.B.: Les étudiants demeurant en résidence devront laisser leur chambre au plus tard douze heures après s'être retirés de la Session d'été.

Les candidats aux grades et diplômes de McGill qui désirent se retirer d'un ou de plusieurs cours après les dates limites ci-dessus doivent obtenir une autorisation écrite du vice-doyen de leur faculté. Si la permission est accordée, le vice-doyen leur donnera alors la mention "W" (retrait) ou "WF" (abandon-échec).

Un étudiant qui, sans excuse valable, n'a pas suivi régulièrement ou n'a pas subi l'examen final d'un cours auquel il était inscrit et duquel il ne s'est pas officiellement retiré se verra accorder la mention "J" (absent).

REMBOURSEMENTS

Les étudiants qui se retirent d'un ou de plusieurs cours avant le début des classes recevront un remboursement total de leurs frais de scolarité; il en est de même de ceux qui se retirent aux dates indiquées ci-dessous. Aucun remboursement ne sera accordé aux étudiants qui se retirent après les dates limites (il n'y aura pas d'exceptions). Cette règle s'applique aussi aux étudiants qui bénéficient d'une aide financière. Prière de noter que les frais d'inscription tardive ($10) ne sont pas remboursables.

Session d'été — Ière partie — Dernier jour pour le remboursement des frais de scolarité

Vendredi, 14 mai	Cours du premier "semestre" et cours complets
Vendredi, 4 juin	Cours du deuxième "semestre"

Session d'été — IIème partie — Dernier jour pour le remboursement des frais de scolarité

Vendredi, 9 juillet	Cours du premier "semestre" et cours complets
Vendredi, 30 juillet	Cours du deuxième "semestre"

Au cas où un cours serait annulé à cause d'un nombre insuffisant d'inscriptions, les frais de scolarité seront remboursés en totalité aux étudiants déjà inscrits.

Les remboursements seront envoyés à l'adresse de l'étudiant deux ou trois semaines après que celui-ci aura formellement indiqué son retrait, s'il a droit à un remboursement.

CHANGEMENT DE NOM OU D'ADRESSE

Les étudiants devront informer le bureau de la Session d'été de tout changement de nom (état civil) ou d'adresse, soit par téléphone soit par lettre. Ils éviteront ainsi des erreurs dans leurs relevés de notes et des retards dans l'acheminement des bulletins et des reçus aux fins d'impôts.

BULLETINS ET RELEVÉS DE NOTES

Le bulletin sert à indiquer à l'étudiant les notes qu'il a obtenues pour les cours auxquels il est inscrit.

Le relevé de notes est un document officiel présentant tout le dossier universitaire de l'étudiant et destiné à être adressé, sur demande seulement, aux universités, commissions scolaires et autres établissements.

Les bulletins seront adressés aux étudiants. Ceux qui désirent faire parvenir un relevé de notes officiel à leur université d'attache ou à une commission

scolaire sont tenus de s'adresser au bureau du Registraire.

Coût — Les deux premières copies: $1.00 la copie
Copies supplémentaires tirées en même temps: $0.25 la copie.

NOTES FINALES

Le Bureau de la Session d'été ne communiquera les notes finales ni par téléphone ni aux étudiants qui s'y présentent en personne.

SYSTÈME D'ÉVALUATION ACADÉMIQUE

À la Session d'été, la moyenne des notes pondérées (Grade Point Average) et la moyenne cumulative des notes pondérées (Cumulative Grade Point Average) ne sont calculées que pour les candidats aux grades et diplômes de McGill.

Voici les équivalences en pourcentages des notes utilisées à l'université McGill:

Études du premier cycle

A	(80—100%)	résultats satisfaisants	D	(45—54%)	résultat conditionnel
B	(65—79%)		F	Échec	
C	(55—64%)		P	Réussite	

K	Incomplet	L'étudiant a une raison valable pour ne pas avoir terminé les dissertations et recherches essentielles. Il aura quatre (4) mois pour les terminer.	Suspension du calcul du G.P.A. jusqu'à l'achèvement des travaux requis.
KK	Achèvement non exigé	La faculté est prête à dispenser indéfiniment l'étudiant de terminer le cours, mais l'étudiant est néanmoins libre de le terminer plus tard.	Cours traité comme un "W"
KF	Incomplet — Échec	L'étudiant n'a pas respecté la date prévue pour soumettre les travaux relatifs à un cours.	Equivalent de "F" dans le calcul du G.P.A.
J	Absent	L'étudiant est inscrit mais ne s'est pas présenté à l'examen ou n'a pas complété les travaux essentiels et n'a pas de raison valable.	Equivalent de "F" dans le calcul du G.P.A.
W	Retrait	L'étudiant a obtenu une autorisation spéciale pour se retirer d'un cours.	N'intervient pas dans le calcul du G.P.A.
WF	Retrait en voie d'échec	L'étudiant a obtenu l'autorisation de se retirer d'un cours mais son travail jusque là est au niveau de "F".	N'intervient pas dans le calcul du G.P.A.
L	Reporte	L'examen final de l'étudiant a été différé pour des raisons telles la maladie ou un deuil à la date de l'examen. L'approbation du vice-doyen de la faculté que fréquente l'étudiant est nécessaire.	Les moyennes G.P.A./C.G.P.A. ne seront pas calculées avant l'élimination du "L".
L*	Reporté	L'étudiant a été autorisé à différer l'examen pour plus de la période normale.	Calculs du G.P.A. identiques à ceux du "L" (Reporté).

Normalement, les notes A, B et C indiquent la réussite, D un résultat conditionnel et F un échec. Certains cours ont été approuvés pour être notés selon le système d'examen réussite/échec (P/F).

Bien que la lettre D n'indique pas un échec, elle ne permet pas l'admission à un cours pour lequel le premier cours est un préalable. Elle n'est pas non plus reconnue si le cours est imposé par le programme de l'étudiant.

Études supérieures

A (80—100%)	première classe
B (65—79%)	deuxième classe
En dessous de 65%	échec
K	incomplet
J	absent
W	retrait
L	reporté

Préalables exigés

C'est à chaque étudiant (nouveau, régulier, visiteur ou spécial) qu'il appartient de s'assurer qu'il a terminé les cours préalables exigés pour le(s) cours au(x) quel(s) il a l'intention de s'inscrire.

Auditeurs

Les auditeurs ne sont pas admis à la Session d'été. Les chargés de cours vérifieront les présences dès que les listes de classe auront été distribuées; les étudiants dont les noms n'apparaissent pas sur ces listes seront priés de se retirer. Les étudiants qui sont inscrits mais dont les noms n'apparaissent pas sur les listes de classe devront se rendre immédiatement au bureau de la Session d'été; les mesures nécessaires seront prises afin d'assurer leur admission à la prochaine classe.

Examens en classe

S'ils le jugent nécessaire, les professeurs pourront tenir de temps en temps des examens en classe.

Examens finals

Des examens finals sont prévus à la fin de chaque "semestre" de chaque Session. Certains cours n'auront pas d'examens finals; dans ce cas, les notes seront déterminées d'après les travaux de cours et les examens subis en classe. La décision relative à la tenue des examens finals relève exclusivement du professeur, mais tous les étudiants inscrits devront recevoir des notes finales.

Les professeurs ne sont autorisés à accorder aucun traitement particulier en matière d'examen. Si un étudiant croit qu'il existe certaines circonstances légitimes dont on pourrait tenir compte dans l'évaluation de son rendement, il devra s'adresser au doyen ou au vice-doyen de sa faculté et non à la Session d'été. Les étudiants visiteurs et spéciaux d'été devront s'adresser à la faculté qui offre le cours.

Absence motivée d'un examen

Si pour des raisons telles la maladie ou un deuil, un étudiant n'est pas en mesure d'écrire ses examens finals, il devra en informer le vice-doyen de sa faculté dans les trois jours qui suivent la date de l'examen. Si la demande est approuvée, au lieu d'une note, la lettre "L" apparaîtra sur le dossier de l'étudiant et sera remplacée par la note qu'il aura obtenue après l'examen reporté. Le vice-doyen fera connaître la date à laquelle l'étudiant devra passer son (ses) examen(s).

Un étudiant visiteur pourra être autorisé à subir un examen reporté si les dispositions nécessaires peuvent être prises quant à la date et si l'université d'attache et la faculté offrant le cours à McGill donnent leur approbation. La lettre "L" sera alors remplacée par la note obtenue lors de l'examen reporté.

Ré-évaluation d'une note

Les travaux sont examinés et les notes calculées avec beaucoup d'attention. Toutefois, si un étudiant désire faire réviser un examen ou vérifier ses notes, il devra s'adresser au bureau du vice-doyen de sa faculté et non au bureau de la Session d'été. L'étudiant devra débourser la somme de dix dollars ($10) qui lui sera remboursée si l'on découvre une erreur en sa faveur. Par contre, si la révision résulte en une note inférieure, c'est cette dernière qui sera accordée et il n'y aura pas de remboursement. Il ne sera pas permis de demander la révision de plus d'une note de cours.

Toute demande de révision d'un travail de classe devra être adressée directement au professeur chargé du cours. Les étudiants visiteurs et spéciaux d'été devront s'adresser à la faculté offrant le cours.

Cours d'anglais, langue seconde

La Session d'été offre un cours d'introduction à l'anglais (110-150C ENGLISH AS A SECOND LANGUAGE) à l'intention des étudiants qui ne parlent pas couramment cette langue. Les étudiants de langue maternelle autre que l'anglais qui désirent améliorer leur compréhension de cette langue auraient intérêt à suivre ce cours.

Ce cours comprend deux heures de classe et une heure de laboratoire chaque matin du lundi au vendredi entre le 5 juillet et le 13 août, et des ateliers bi-hebdomadaires, des excursions et des activités socio-culturelles l'après-midi. Les étudiants ont également accès à des laboratoires où ils peuvent s'exercer seuls.

Un test de classement est obligatoire. Ce test ne constitue pas un examen, mais plutôt un moyen de déterminer à quel niveau le candidat devrait être placé. Il aura lieu les 28 et 29 juin. Les candidats recevront, au moment de l'inscription, une carte indiquant le jour où ils devront se présenter pour subir le test.

N.B.: **LES CANDIDATS DOIVENT S'INSCRIRE À CE COURS AU PLUS TARD LE 25 JUIN.** Les inscriptions se font dans l'ordre dans lequel elles sont reçues et les candidats ont intérêt à s'inscrire le plus tôt possible car le nombre d'inscriptions est limité. Les frais de scolarité sont de $114.00 et doivent être acquittés par traite bancaire ou mandat lors de l'inscription. Prière d'établir les traites ou mandats en monnaie canadienne et payables à l'ordre de l'Université McGill.

Les candidats désireux de suivre ce cours mais qui n'ont pas été admis à McGill seront autorisés à s'inscrire après avoir signé la déclaration mentionnée à la rubrique "Renseignements généraux". L'inscription peut être faite par la poste ou en personne. Les candidats sont priés de se procurer les formules d'inscription et de déclaration en s'adressant au bureau de la Session d'été.

SERVICES AUX ÉTUDIANTS

Résidences

Peux de chambres en résidence seront disponibles. Les étudiants qui désirent habiter en résidence sont priés de s'inscrire à la Session d'été le plus tôt possible; ils devront être à même de prouver leur inscription à la Session d'été lorsqu'ils s'adresseront à la résidence pour y obtenir une chambre. Les premiers arrivés seront les premiers servis. Lorsque toutes les chambres des trois résidences auront été prises, il nous sera impossible d'aider nos étudiants à se loger.

Les étudiants qui s'inscrivent trop tard pour être logés en résidence devront s'adresser à Hébergement Québec qui est responsable de la location de toutes les chambres disponibles au public durant la période allant du 1er mai jusqu'au 31 août 1976. Veuillez vous adresser à Hébergement Québec au numéro de téléphone suivant: (514) 873-1976.

Les étudiants qui s'inscrivent à la Session d'été en accord avec les règlements stipulés à la rubrique "Renseignements Généraux" de cet annuaire recevront une carte d'identité. Cette carte d'identité doit être présentée lorsque l'étudiant se rend à la résidence pour y louer une chambre.

Les formules d'application à la résidence sont disponibles au bureau de la Session d'été. Toute autre communication doit être adressée directement à la résidence, comme suit: Le gérant, Résidence Royal Victoria College, Université McGill, 3425, rue Université, Montréal, Québec H3A 2A8. (Téléphone: (514) 392-4613).

N.B.: Les étudiants qui se retirent de la Session d'été devront laisser leur chambre en résidence au plus tard douze heures après leur retrait.

Les dommages à la chambre ou à l'ameublement seront portés au compte de l'étudiant.

Toutes les chambres sont convenablement meublées. Les résidents reçoivent un dessus de lit, des draps, taies d'oreiller et deux serviettes. Il n'y a pas de service de chambre. Des cuisinettes se trouvent dans chacune des trois résidences. Les résidents pourront aussi avoir un poste de radio, un phono ou autres petits appareils électriques dans leur chambre. Les résidences offrent aussi des salles pour les loisirs.

Des buanderettes se trouvent dans chacune des trois résidences. Une blanchisserie commerciale fait régulièrement la tournée des résidences.

Bien que toutes les mesures nécessaires soient prises afin d'assurer la protection des résidences, l'Université n'accepte aucune responsabilité à l'égard des objets personnels qui se trouvent dans les chambres des étudiants.

Les frais de résidence sont de $90.00 par semaine, chambre et pension. Un dépôt de $10.00 *doit* être versé un mois avant la date d'arrivée; le restant des frais de résidence peut être acquitté au moment de l'arrivée de l'étudiant. Seulement les *traites bancaires* et les *mandats* seront acceptés. N'INCLUEZ **PAS** LE PAIMENT DE VOS FRAIS DE RÉSIDENCE AVEC CELUI DE VOS FRAIS DE SCOLARITÉ.

Si vous désirez une demande d'admission à la résidence, VEUILLEZ COCHER LA SECTION APPROPRIÉE DE LA FORMULE D'INSCRIPTION À LA SESSION D'ÉTÉ.

Les étudiants de la Session d'été qui n'habitent pas en résidence sont invités à venir profiter du service de repas à la carte offert par la cafétéria de la résidence Royal Victoria College.

BIBLIOTHÈQUES

Les étudiants de la Session d'été sont libres d'utiliser les services des bibliothèques de l'université. On trouvera ci-dessous la liste des bibliothèques, leurs adresses et numéros de téléphone. Comme les services et les horaires d'été varient d'une bibliothèque à l'autre, il est préférable de se renseigner avant de se rendre à une bibliothèque donnée. La "Undergraduate Library" (bibliothèque des étudiants du premier cycle) offre les services de consultation sur place et de prêts; il en est de même de la bibliothèque McLennan qui contient la collection de recherches en humanités et sciences sociales.

Humanités et sciences sociales

Art et Architecture
Bibliothèque Blackader-Lauterman
Bibliothèque Redpath
Tél: 392-5211

Bibliothéconomie
Bibliothèque McLennan
rez-de-chaussée
Tél: 392-5931

Éducation
Pavillon de l'Éducation
3700 rue McTavish
Tél: 392-8805

Éducation physique
Gymnase Currie
475 avenue des Pins ouest
Tél: 392-8893

Études Islamiques
Pavillon Leacock
Chambre 911
Tél: 392-5197

Bibliothèque Howard Ross
Administration des Affaires
1001 rue Sherbrooke ouest
Tél: 392-5804

Bibliothèque McLennan
Tél: 392-4936

Musique (livres, partitions, disques)
Faculté de Musique
555 rue Sherbrooke ouest
Tél: 392-4530

Études Religieuses
Pavillon William & Henry Birks
3520 rue Université
Tél: 392-4832

Service Social
Pavillon Wilson
3506 rue Université
Tél: 392-5046

Bibliothèque de la Faculté de Droit
Pavillon Chancellor Day
3644 rue Peel
4e étage
Tél: 392-5067

Sciences pures et sciences appliquées

Bibliothèque Blacker-Wood
Zoologie et Ornithologie
Bibliothèque Redpath
Tél: 392-5406

Botanique-Génétique
Pavillon Stewart
Chambre S 3/1
Tél: 392-5829

Chirurgie Dentaire
Pavillon Strathcona
Rez-de-chaussée
Tél: 392-4926

Génie
Pavillon Macdonald
Tél: 392-5914

Mathématiques
Pavillon Burnside
Chambre 1105
Tél: 392-8273

Pavillon Frank Dawson Adams
3450 rue Université
Tél: 392-5729

Undergraduate Library — Étudiants du premier cycle
Bibliothèque Redpath
Tél: 392-6776

Médecine
Centre Médical McIntyre
1200 avenue des Pins ouest
3e étage
Tél: 392-4334

Nursing
Pavillon Wilson
3506 rue Université
Tél: 392-5027

Bibliothèque Osler
Collection Histoire de la Médecine
Centre Médical McIntyre
1200 avenue des Pins ouest
3e étage
Tél: 392-4329

Hors campus

Bibliothèque du Collège Macdonald
Faculté d'Agriculture
Ste. Anne de Bellevue, Québec
Tél: 457-6580, poste 213

Bibliothèques affiliées

Allan Memorial Institute (AMI)
Collection de Psychiatrie
1025 avenue des Pins ouest
Tél: 842-1251, poste 269

Géographie
Collection de cartes géographiques
Pavillon Burnside
Chambre 524
Tél: 392-5492

Océanographie
772 rue Sherbrooke ouest
Tél: 392-5723

Météorologie
Pavillon Burnside
7e étage
Tél: 392-8237

Horaire d'été de la librairie en 1976

La librairie de l'université McGill, située dans le Pavillon Bronfman (1001, rue Sherbrooke ouest) sera ouverte de 10h à 16h 30 du lundi au vendredi. La librairie est fermée le samedi.

Stationnement

Un nombre limité d'étudiants de la Session d'été seront autorisés à stationner leurs voitures dans les espaces réservés à cette fin sous réserve d'acquitter les tarifs normaux et de se conformer aux règlements. Les permis seront disponibles au bureau du stationnement qui est situé au 840, rue McGregor le 10 mai et le 1er juin de 13h à 16h 30. Les 5 et 27 juillet, (le matin seulement) on pourra se procurer les permis en se présentant au foyer principal du Pavillon de l'Éducation, situé au 3700, rue McTavish.

L'Université McGill n'accepte aucune responsabilité pour les dommages ou le vol d'un véhicule ou de son contenu pendant que le véhicule se trouve sur la propriété de l'Université.

SERVICES OFFERTS À TITRE FACULTATIF AUX ÉTUDIANTS VISITEURS ET SPÉCIAUX D'ÉTÉ

Les étudiants de McGill qui sont en possession de cartes d'identité validées des sessions d'automne et d'hiver 1975-76 ont droit aux services aux étudiants pendant l'été.

Tous les autres étudiants peuvent bénéficier des services ci-dessous sur une base FACULTATIVE moyennant le versement de $10 pour une session ou de $15 pour les deux sessions (12 semaines):

SERVICES RELIGIEUX

Les aumôniers universitaires, indépendants de l'administration de McGill, mettent à la disposition de tous les étudiants un service d'orientation dans les domaines tels que le mariage, les systèmes de valeurs et la dynamique des groupes. Ils organisent régulièrement des réunions publiques consacrées à divers sujets religieux et universitaires.

Au 3484, rue Peel, les étudiants ont à leur disposition un salon et une salle de lecture où ils peuvent consulter gratuitement des livres et périodiques et obtenir des renseignements sur les services des différentes confessions.

Adresse	3484, rue Peel
Renseignements généraux	392-5890

SERVICE DE CONSULTATION

Ce bureau offre un endroit où les étudiants de toutes les facultés peuvent discuter de n'importe quel problème de manière confidentielle. Parmi les services offerts, citons ceux d'orientation individuelle, des groupes d'auto perfection humaine, d'évaluation psychologique, de tests professionnels, de cours de lecture rapide, de planification des carrières et de la bibliothèque des renseignements sur les carrières.

Adresse	522, avenue des Pins ouest
Renseignements généraux	392-5119

BUREAU D'AIDE AUX ÉTUDIANTS ET D'ORIENTATION DES ÉTUDIANTS ÉTRANGERS

La section de l'aide aux étudiants de ce bureau s'occupe de toutes les questions reliées à l'assistance financière offerte par l'Université, le gouvernement provincial ou le gouvernement fédéral. Les étudiants non canadiens pourront s'adresser à ce bureau pour obtenir des certificats d'inscription et des avis indiquant leurs frais de scolarité et dépenses personnelles au cours de leur séjour à McGill et qu'ils peuvent envoyer aux devises étrangères de leurs pays respectifs.

La section d'orientation des étudiants étrangers s'occupe de toutes les questions qui peuvent affecter les étudiants non-canadiens telles que les rapports avec le ministère de la main-d'oeuvre et de l'immigration et l'assurance maladie obligatoire.

Adresse	3465, rue Peel
Renseignements généraux	392-5256

SERVICE MEDICAL

Les cliniques sont ouvertes de 9h à 17h cinq jours par semaine. Le soir et pendant les fins de semaine, un médecin est de service et on pourra le rejoindre en téléphonant au service médical. Le personnel comporte des médecins hommes et femmes ainsi que des infirmières compétentes. Les étudiants sont priés de se munir de leur carte d'assurance-maladie ou de l'équivalent. Tous les renseignements fournis à ce service restent absolument confidentiels et ne feront nullement partie du "dossier universitaire".

De nombreux étudiants s'adressent à ces cliniques pour exposer des problèmes ayant trait à la vie sexuelle, aux contraceptifs, aux drogues et aux maladies vénériennes. Nous engageons vivement les étudiants qui craignent d'avoir contracté une maladie vénérienne de consulter ce service. Et ceux qui sont aux prises avec des problèmes de toxicomanie sont aussi invités à s'adresser à ce service et en particulier à la section de santé mentale.

Afin d'obtenir une assurance-maladie pour la durée de leur séjour à McGill, les étudiants canadiens des provinces autres que le Québec ont intérêt à consulter les bureaux d'assurance-hospitalisation et maladie de leurs provinces respectives avant de venir à McGill. Cette question est d'autant plus importante que les résidents des autres provinces ne sont pas couverts par le régime du Québec pendant qu'ils font leurs études à McGill.

Adresse	517 avenue des Pins ouest
Rendez-vous et bureau principal	392-5441
Section santé mentale	392-5449
Adresse	Collège Macdonald
Rendez-vous et bureau principal	457-6581

SERVICE DE LOGEMENT HORS-CAMPUS

Ce service est assuré pendant toute l'année. A l'aide des ordinateurs de McGill, il maintient à jour les listes de divers types de logement dans le centre-ville et les banlieues périphériques desservies par autobus ou métro. Il essaie également de placer les étudiants francophones qui veulent vivre dans des familles anglophones et vice-versa. Les étudiants qui désirent se prévaloir de ce service sont priés de se présenter en personne.

Adresse	3465, rue Peel
Renseignements généraux	392-4554

PLACEMENT DES ÉTUDIANTS

Le Centre de Main-d'oeuvre du Canada assure un service complet de placement à l'intention des étudiants à la recherche d'emplois à temps partiel, d'été ou permanent. Les principaux objectifs de ce service consistent à encourager les employeurs à mettre un grand nombre de possibilités d'emploi à la disposition des étudiants de McGill; à aider les étudiants à trouver des emplois convenables en fournissant des renseignements sur le marché du travail et en organisant des entrevues avec les

employeurs éventuels; à encourager les étudiants à se préparer à une carrière en faisant leur propre recherche du marché du travail grâce aux services des bibliothèques, films, séminaires, visites industrielles, emplois d'été et à temps partiel.

Adresse 762, rue Sherbrooke ouest
Renseignements généraux 283-4411

ATHLÉTISME

Les locaux du gymnase Currie ont été réservés par le Comité Organisateur des Jeux Olympiques; par conséquent, les étudiants de la Session d'été n'auront pas accès aux installations d'athlétisme. Certaines installations seront peut-être disponibles pour la durée de la 1ère partie de la Session d'été (du 10 mai au 18 juin) mais aucune pour la IIème partie (du 5 juillet au 13 août), à l'exception de la piscine qui pourrait être ouverte aux étudiants à la fin des jeux olympiques (le 2 août) jusqu'au 13 août.

Pour obtenir de plus amples renseignements à ce sujet, prière de s'adresser directement au bureau d'athlétisme (392-4725) et non pas au bureau de la Session d'été.

3. COURSE DESCRIPTIONS

FACULTY OF ARTS

Associate Dean: Dr. D.C. Frye

ANTHROPOLOGY

151-222L THE CULTURAL DIVERSITY OF MAN. (6 credits.) An introductory analysis of human cultures: levels of technological complexity from hunters/gatherers through industrialism: social and cultural systems, kinship, politics, economics, religion and the arts. Readings and films from both traditional and modern societies.
May 10 — June 18
10:30 — 12:30 daily
Pre-Sessional Reading: Bowen, Elinore S., *Return to Laughter.*
Professor Aronson

151-224L WOMEN AND SOCIETY. (3 credits.) An introduction to the comparative study of women in society. A wide range of anthropological studies are examined along with theoretical models regarding changes in women's position. Women in simple and complex societies; women and social change; problems of women in developing societies.
May 10 — May 28
16:00 — 18:00 daily
Ms Bossen

151-228C AN INTRODUCTION TO EDUCATIONAL ANTHROPOLOGY. (3 credits.) Anthropological approaches to the study of education will be delineated using case studies from a wide range of cultural situations. A theoretical analysis of such areas as the transmission of values, the classroom as a unit of sociocultural analysis, and the role and functions of formal education.
July 6 — August 13
10:30 — 12:30 alternate days, e.g. TTh, MWF, TTh, etc.
Professor Walcott

CLASSICS

114-203L INTRODUCTION TO GREEK MYTHOLOGY. (3 credits.) A survey of the myths and legends of Ancient Greece.
May 10 — May 28
10:30 — 12:30 daily
Text: Morford and Lenardon, *Classical Mythology,* Longman Canada Ltd., Don Mills, Ontario, 1972.
Suggested Pre-Sessional Readings: Hamilton, E., *Mythology,* or Rose, H.J., *Gods and Heroes of the Greeks.*
Professor Snider

114-203C INTRODUCTION TO GREEK MYTHOLOGY. (3 credits.) A survey of the myths and legends of Ancient Greece.
July 5 — July 23
10:30 — 12:30 daily
Text: Morford and Lenardon, *Classical Mythology,* Longman Canada Ltd., Don Mills, Ontario, 1972.
Suggested Pre-Sessional Readings: Hamilton, E., *Mythology,* or Rose, H.J., *Gods and Heroes of the Greeks.*
Professor Snider

EAST ASIAN LANGUAGES AND LITERATURE

117-210C FIRST LEVEL CHINESE. (6 credits.) Introduction to the use of modern Chinese language (Mandarin), including instruction in basic grammar and patterns, with emphasis on speaking and pronunciation. Direct methods, as well as filmstrips and tape recordings are used for audolingual achievements.
July 5 — August 27
18:00 — 20:00 daily
Wang, Peggy, *Elementary Chinese I,* Laboratory Work Book, Exercise Work Book, Peking Press, 1973.
Miss Wang

117-215C FIRST LEVEL JAPANESE. (6 credits.) Introduction to the basic grammar patterns of the Japanese language in both oral and written forms. In reading and writing skills students will be introduced to katakana and hiragana.

July 5 — August 27
18:00 — 20:00 daily
Text: Japanese Language Promotion Centre, *Intensive Course in Japanese,* Vols. I, II and III, Language Service Company Ltd., 1970.
Professor Geddes

117-220C SECOND LEVEL CHINESE. (6 credits; Prerequisite: Chinese 117-210D.) Second level is a continuation of Chinese 117-210D with more advanced study of Chinese language in both aspects of reading and conversation; grammar, vocabulary building and writing practice. Basic literary structures will be introduced, permitting the students to become familiar with the literature.
July 5 — August 27
18:00 — 20:00 daily
Wang, Peggy, *Elementary Chinese II,* Laboratory Work Book, Exercise Work Book, Peking Press, 1973.
Miss Chang-Orlov

ECONOMICS

154-200L ECONOMIC ANALYSIS AND APPLICATIONS. (6 credits.) A university level introduction to price theory, national income determination, money and banking, international trade theory and economic policy.
May 10 — July 2
10:30 — 12:30 daily
Professor Davenport

154-302L MONEY AND BANKING. (6 credits; Prerequisite: 154-200.) Principles of money, banking, and central banking covering the nature of money, measurement of money supply, determination of the quantity of money; sources of bank funds, uses of bank funds, nature of central banking, monetary policy, and the international payments system.
May 10 — July 2
16:00 — 18:00 daily
Professor Galbraith

ENGLISH

110-150C ENGLISH AS A SECOND LANGUAGE. (6 credits.) Designed to help students whose native tongue is not English and who have difficulty in: a) understanding spoken English, b) speaking it themselves, c) reading English text material or d) writing assignments in English. Classroom instruction and language lab.
July 5 — August 13
2 hrs. lectures, 1 hr. lab. daily
(Open to anyone whose mother tongue is not English.) Limited enrolment on a first come first served basis. Please see "English as a Second Language Course" in the General Information section of this Announcement.
Professor Chow and Staff

110-150C ANGLAIS — COURS DE LANGUE SECONDE. (6 crédits.) Offert aux étudiants dont la langue maternelle est autre que l'anglais et qui ont de la difficulté à: a) le comprendre, b) le parler, c) l'écrire. Cours et périodes de laboratoire. Ouvert à tous ceux dont la langue maternelle n'est pas l'anglais. L'inscription est limitée; les premiers arrivés seront les premiers servis. Prière le consulter la rubrique "cours d'anglais langue seconde" à la section Renseignements Généraux de cet annuaire.
5 juillet — 13 août
2 heures de cours et une heure de laboratoire par jour
Mlle Chow et Associés

110-200L SURVEY OF ENGLISH LITERATURE I. (3 credits.) A survey of major works and trends from Beowulf to T.S. Eliot. Emphasis on evolutions of the heroic ideal, within a wide range of genres. Concomitant study of related works in other aspects of Western culture, particularly in art, with use of audio-visual materials, including Kenneth Clarke's *Civilization* series. In sum, an attempt to capture something of the development of Western civilization as a whole, as manifested in English literature.
May 10 — May 28
10:30 — 12:30 daily
Text: The Norton Anthology of English Literature, edited by Abrams, Vols. I and II, 3rd ed., 1974.
Professor Piehler

110-201L SURVEY OF ENGLISH LITERATURE II. (3 credits.) A continuation of 110-200L.
June 1 — June 18
10:30 — 12:30 daily
Text: The Norton Anthology of English Literature, edited by Abrams, Vols. I and II, 3rd ed., 1974.
Professor Piehler

110-225C AMERICAN LITERATURE I. (3 credits.) A study of the literary works of earlier American writers.
July 5 — July 23
10:30 — 12:30 daily
T.B.A.

110-226C AMERICAN LITERATURE II. (3 credits; Prerequisite: English 225C.) A study of the literary works of later American writers.
July 27 — August 13
10:30 — 12:30 daily
T.B.A.

The following three courses on the subject of the English Language are offered in a "modular" format. There are no regular class meetings or formal lectures as such but there is a pool of "independent study" units and a "resource center" where tutorial guidance is available at the hours assigned for the course. An Introductory Handbook which describes the courses in detail is available in the Bookstore.

***110-252L STRUCTURE OF THE ENGLISH LANGUAGE.** (3 credits.) An introduction to the linguistic study of the English language: includes traditional, structural and transformational generative approaches to sound and syntax.
May 10 — June 18
10:30 — 12:30 first meeting
Texts: Modules
Professor I. Gopnik

***110-253L HISTORY OF THE ENGLISH LANGUAGE.** (3 credits; Prerequisite: English 252 or Linguistics 200.) An introduction to both the internal (sound and syntax) and external (socio-cultural) history of English.
May 10 — June 18
10:30 — 12:30 first meeting
Texts: Modules
Professor I. Gopnik

***110-254L THE ENGLISH LANGUAGE AND THE STUDY OF LITERATURE.** (3 credits; Prerequisite: English 252 or Linguistics 200.) The study of linguistic theories of poetics and the application of linguistic techniques to problems of literary criticism such as stylistics, structural and thematic analysis, metrics, etc.
May 10 — June 18
10.30 — 12:30 first meeting
Texts: Modules
Professor I. Gopnik

110-275L COMMUNICATION, LITERATURE, AND SOCIETY. (6 credits.) An overview of human communication processes and phenomena. The course will deal with both the theoretical and practical aspects of communication. Format: A modular course combined with a series of lectures. Three (3) weekly lectures; furthermore, the Drop-In Centre will be open for consultation, discussion, etc. A series of workshops will also be given.
May 10 — June 18
8:00 — 10:00 Tuesday, Wednesday & Thursday
Conference and Drop-In Centre times: T.B.A.
Professor Lafon

110-279L INTRODUCTION TO THE FILM. (6 credits.) An introductory study of the cinema as a medium.
May 10 — June 18
13:30 — 15:30 daily
Mr. D. Levy

*Three-credit courses may be completed in either three or six weeks. Reports of standing will be produced only after June 18.

110-315L SHAKESPEARE. (6 credits.) Analysis of selected plays of Shakespeare, with particular emphasis on the comparative structures of comedy, chronicle and tragedy. Lectures will attempt to place the plays in the material and cultural context of late sixteenth and early seventeenth century English society. Plays to be studied include *Richard III*, the first and second parts of *Henry IV*, *Midsummer Night's Dream*, *As You Like It*, *Twelfth Night*, *Hamlet*, *Othello*, *King Lear*, and others.
May 10 — June 18
13:30 — 15:30 daily
Text: The Pelican Shakespeare.
Professor Bristol

110-329L 20TH CENTURY CANADIAN LITERATURE. (6 credits.) A study of 20th century Canadian prose and poetry, with emphasis on prose.
May 10 — June 18
10:30 — 12:30 daily
Professor Conway

110-340L INTRODUCTION TO CHILDREN'S LITERATURE I. (3 credits.) Study of children's literature in its society and critical context.
May 10 — May 28
13:30 — 15:30 daily
Professor Reichertz

110-341L INTRODUCTION TO CHILDREN'S LITERATURE II. (3 credits; Prerequisite: 110-340L.) Study of children's literature in its society and critical context.
June 1 — June 18
13:30 — 15:30 daily
Professor Reichertz

110-375C MASS MEDIA CRITICISM. (6 credits.) The nature of judgements that can be made about the products of the mass media.
July 5 — August 13
10:30 — 12:30 daily
T.B.A.

110-398L DEPARTMENTAL SEMINAR. (6 credits.) Topic for the 1976 Summer Session: 20th Century Drama. Representative plays from the major genres of 20th Century Drama will be read and discussed.
May 10 — June 18
10:30 — 12:30 daily
T.B.A.

110-431C STUDIES IN DRAMA. (6 credits.) The course will cover developmental drama, theory and practical work in movement, speech, sensory exploration, improvisation, story dramatization, interpretation of poetry, dance, drama, etc.
July 5 — August 13
10:30 — 12:30 daily
Ms. Russel

110-437L STUDIES IN A LITERARY FORM. (3 credits.) Topic for the 1976 Summer Session: Metaphysical Poetry. A detailed examination of Metaphysical Poets with particular emphasis on John Donne.
May 10 — May 28
10:30 — 12:30 daily
Professor Bouchard

110-438L STUDIES IN A LITERARY FORM. (3 credits; Prerequisite: 110-437L.) Topic for the 1976 Summer Session: Metaphysical Poetry. A detailed

examination of Metaphysical Poets excluding John Donne.
June 1 — June 18
10:30 — 12:30 daily
Professor Bouchard

110-498C DEPARTMENTAL SEMINAR. (6 credits.) Topic for the 1976 Summer Session: Semiotics. A discussion of current trends in semiotics.
July 5 — August 13
13:30 — 15:30 daily
T.B.A.

FRENCH LANGUAGE CENTRE

127-211L ORAL AND WRITTEN FRENCH I. (6 credits; Prerequisite: French 127-201D or equivalent beginners' course.) Mainly for students from outside the Province of Quebec with only an elementary knowledge of French. Comprehension, grammar, vocabulary; discussion and essays on topics chosen and presented by students. Language laboratory practice.
May 10 — June 18
10:30 — 12:30 daily
Limited Registration. Admission *only* after testing and interview. Students must present themselves at the French Language Centre, 3438 McTavish Street for the test and interview *BEFORE* they register for the course by mail or in person. It is preferable to phone in advance for an appointment: 392-5727.
T.B.A.

127-341L INTERMEDIATE FUNCTIONAL FRENCH. (6 credits; Prerequisite: High School French or equivalent.) Mainly for students who attended High School in Quebec Province. Practice in oral French via discussions, student presentation, films, records, etc. Systematic study of recurrent language problems. Short written assignments. Frequent extra-curricular activities. Students will each be required to work on a project demonstrating their contact with the French-speaking community.
May 10 — June 18
10:30 — 12:30 daily
Limited Registration Admission *only* after testing and interview. Students must present themselves at the French Language Centre, 3438 McTavish Street for the test and interview *BEFORE* they register for the course by mail or in person. It is preferable to phone in advance for an appointment: 392-5727.
T.B.A.

FRENCH LANGUAGE AND LITERATURE

125-200L COMPOSITION I. (6 crédits; Préalable: test de classement.) Révision systématique de la grammaire française; acquisition de vocabulaire; traduction et compositions élémentaires.
10 mai — 18 juin
10:30 — 12:30 lundi au vendredi
Inscription limitée
Madame Chatterjee

125-202L INTRODUCTION A LA LITTÉRATURE FRANÇAISE. (6 crédits.) Une initiation à la littérature française par une étude des principaux textes.
10 mai — 18 juin
8:00 — 10:00 lundi au vendredi
Madame Starosta

125-204C CIVILISATION QUEBECOISE I. (3 crédits.) Initiation à la culture québécoise. La société québécoise, la vie sociale, économique et culturelle du Québec seront étudiées à l'aide d'oeuvres littéraires et artistiques.
5 juillet — 23 juillet
16:00 — 18:00 lundi au vendredi
Monsieur Hughes

125-205C CIVILISATION QUEBECOISE II. (3 crédits.) Initiation à la culture québécoise. La société québécoise, la vie sociale, économique et culturelle du Québec seront étudiées à l'aide d'oeuvres littéraires et artistiques.
27 juillet — 13 août
16:00 — 18:00 lundi au vendredi
Monsieur Hughes

125-240C COMPOSITION III. (6 crédits; Préalable: test de classement.) Enrichissement de la langue; délimitation des faits d'expression; étude systématique des ressources expressives de la langue. Rédactions.
5 juillet — 13 août
10:30 — 12:30 lundi au vendredi
Inscription limitée
Monsieur Reed

GERMAN

129-202L GERMAN LANGUAGE, BEGINNERS. (6 credits.) A solid, traditional method. The stress is on oral and written comprehension and expression.
May 10 — June 18
18:00 — 20:00 daily
Text: Kessler, H., *Deutsch für Ausländer,* Verlag für Sprachmethoden, 1972.
Limited Registration
T.B.A.

129-202C GERMAN LANGUAGE, BEGINNERS. (6 credits.) A solid, traditional method. The stress is on oral and written comprehension and expression.
July 5 — August 13
18:00 — 20:00 daily
Text: Kessler, H., *Deutsch für Ausländer,* Verlag für Sprachmethoden, 1972.
Limited Registration
T.B.A.

129-252L GERMAN LANGUAGE, INTERMEDIATE. (6 credits; Prerequisite: 129-202 or permission of Department.) A continuation of 129-202.

Stress is on oral and written comprehension and expression.
May 10 — June 18
18:00 — 20:00 daily
Text: Schulz-Sundermeyer, *Deutsche Sprachlehre für Ausländer,* Hueber, 1973.
Limited Registration
T.B.A.

129-252C GERMAN LANGUAGE, INTERMEDIATE. (6 credits; Prerequisite: 129-202 or permission of Department.) A continuation of 129-202L. Stress is on oral and written comprehension and expression.
July 5 — August 13
18:00 — 20:00 daily
Text: Schulz-Sundermeyer, *Deutsche Sprachlehre für Ausländer,* Hueber, 1973.
Limited Registration
T.B.A.

HISTORY

101-202C AN INTRODUCTION TO THE HISTORY OF CANADA. (6 credits.) This course will be a survey of the evolution of Canada, from the pre-Columbian explorations to the end of the Second World War. Social, economic, political, and intellectual developments will all be considered in a general way. Special emphasis will be placed on the themes of French-English relations, regional particularism, Canadian-American relations, and the influence of technology on Canadian society.
July 5 — August 13
13:30 — 15:30 daily
T.B.A.

101-241C HISTORY OF THE UNITED STATES. (6 credits). A survey of the development of the United States of America from the era of European exploration to the present. Emphasis will be placed upon the growth of the English colonies within the British Imperial system, the War of Independence, the Constitution, political and economic progress in the nineteenth century, the Civil War, and domestic and international politics since 1900. (This course is not open to candidates who have previously taken History 211A and/or 221B.)
July 5 — August 13
10:30 — 12:30 daily
T.B.A.

ISLAMIC STUDIES

***397-200L ELEMENTARY ARABIC.** (6 credits.)

***397-622L LOWER INTERMEDIATE ARABIC.** (Full course).

**Please see the Faculty of Religious Studies.*

ITALIAN

132-230C SURVEY OF ITALIAN LITERATURE. (6 credits; Prerequisite: CEGEP Intermediate Italian or permission of the Department.) Readings from representative works of Italian literature; special emphasis on the nineteenth and twentieth centuries.
July 5 — August 13
18:00 — 20:00 daily
Professor Picone

132-360C SEMINAR ON ITALIAN STYLISTICS AND COMPOSITION. (6 credits; Prerequisite: Permission of the Department.) Intensive practice in stylistics and composition, with special emphasis on literary style. Seminar discussions on exercises and papers submitted by the students. Oral dissertations on various subjects, mainly of a literary character, prepared and delivered by students.
July 5 — August 13
18:00 — 20:00 daily
Professor Picone

JEWISH STUDIES

135-316C SOCIAL AND ETHICAL ISSUES OF JEWISH LAW I. (3 credits.) This course will deal with the introduction, nature and history of Jewish Law. Specific issues to be discussed are: Law and morality; abortion; self-incrimination; and ecology.
July 27 — August 13
13:30 — 15:30 daily
Professor Kaplan

135-318C INTRODUCTION TO JEWISH THOUGHT. (3 credits.) AWAITING APPROVAL. This course will examine basic areas and modes of Jewish thought and will focus on the issues and problems raised by Rabbinic, Medieval and modern Jewish thinkers concerning the personalities and careers of certain central Biblical figures. Among the topics to be discussed are: Abraham: Rationalist and Existentialist; Moses: Lawgiver, Statesman, Philosopher and Mystic; David: King, Sinner, Messiah; Job: Patient Sufferer and Rebel.
July 27 — August 13
10:30 — 12:30 daily
Professor Kaplan

135-320L INTERMEDIATE HEBREW. (6 credits; Prerequisite: Hebrew 135-220D or its equivalent.)
May 10 — June 18
10.30 — 12:30 daily
Mr. S. Levy

135-434C TUTORIAL IN HEBREW LITERATURE. (3 credits; Prerequisite: Fluency in reading Biblical Hebrew is essential.) Topic for Summer, 1976: *The Book of Genesis.* Great emphasis will be placed on the contributions of archaeology and comparative Semitic linguistics for understanding the text.
July 5 — July 23
10:30 — 12:30 daily
Professor B. Levy

135-436C TUTORIAL IN HEBREW LITERATURE. (3 credits; Prerequisite: Fluency in reading Post-Biblical Hebrew.) Topic for Summer, 1976: *Readings in Jewish Interpretation of the Bible.* In-depth

analysis of selections from the classical Jewish Literature of Biblical interpretation: commentaries, response, philosophical and linguistic tractates, etc.; excerpts from the Talmud, Ibn Jonach, Ibn Ezra, Maimonides, Nachmanides, Abravanel, Ibn Zimra, E. Levita, M. Sofer, S.D. Luzzatto.
July 5 — July 23
13:30 — 15:30 daily
Professor B. Levy

LINGUISTICS

The following two courses on the subject of Linguistics are offered in a "modular" format. There are no regular class meetings or formal lectures as such, but there is a pool of "independent study" units and a "resource center" where tutorial guidance is available at the hours assigned for the course. An Introductory Handbook which describes the courses in detail is available in the Bookstore.

104-200L INTRODUCTION TO THE STUDY OF LANGUAGE I. (3 credits.) The aim of this course is to acquaint beginners in Linguistics with the wide range of contemporary views on language. A core of obligatory topics deals with sound, syntax, semantics and language change. In addition to these, the student will choose other topics from a wide range of related topics. N.B.: This is a modular course and can be taken from either:
May 10 — June 18 first class: 10:30 — 12:30
May 10 — May 28 first class: 10:30 — 12:30
June 1 — June 18 first class: 10:30 — 12:30
Texts: Modules
Professor M. Gopnick

104-201L INTRODUCTION TO THE STUDY OF LANGUAGE II. (3 credits.) The aim of this course is to acquaint beginners in Linguistics with the wide range of contemporary views on language. A core of obligatory topics deals with sound, syntax, semantics and language change. In addition to these, the student will choose other topics from a wide range of related topics. N.B.: This is a modular course and can be taken from either:
May 10 — June 18 first class: 10:30 — 12:30
May 10 — May 28 first class: 10:30 — 12:30
June 1 — June 18 first class: 10:30 — 12:30
Texts: Modules
Professor M. Gopnick

104-205L INTENSIVE INUKTITUT (ESKIMO) FOR BEGINNERS. (6 credits.) An Introduction to the basic structures of Inuktitut, with intensive drill and classroom practice in the use of the language.
May 10 — June 18
10:30 — 12:30 daily
Text: Mallon, S.T., (adapted to Ungava dialect), *Inuktitut: Phase I and II.*
Mr. Partridge and Professor Ellis

104-230L ANTHROPOLOGICAL LINGUISTICS. (3 credits.) Interdependence between culture and language as it affects the similarities and differences among languages and their evolution.
May 10 — May 28
13:30 — 15:30 daily
Professor Domingue

104-350L INTRODUCTION TO GENERAL PHONETICS. (3 credits.) This course is concerned with an in-depth analysis of human speech sounds. Emphasis will be placed on production and perception. Detailed description of the speech mechanism will be provided.
May 10 — May 28
10:30 — 12:30 daily
Pre-Sessional Reading: Denes, P.B. and Pinson, B.N., *The Speech Chain,* Bell Telephone Lab, 1963.
Text: Ladefoged, P., *A Course in Phonetics,* Harcourt, 1975.
Professor Piggott

PHILOSOPHY

107-200C INTRODUCTION TO PHILOSOPHY I. (3 credits.) A survey of several important texts drawn from the history of philosophy including selections from Plato, Wittgenstein, Nietzsche, and Hume.
July 5 — July 23
10:30 — 12:30 daily
Professor McGilvray

107-201C INTRODUCTION TO PHILOSOPHY II. (3 credits.) A survey of several important texts drawn from the history of philosophy including selections from Plato, Wittgenstein, Nietzsche, and Hume. A continuation of 107-200C.
July 27 — August 13
10:30 — 12:30 daily
Professor McGilvray

107-210L INTRODUCTION TO DEDUCTIVE LOGIC I. (3 credits.) Propositional and predicate logic; formalization of arguments, truth-tables, natural deduction and more.
May 10 — May 28
13:30 — 15:30 daily
Professor Gupta

107-374L PHENOMENOLOGY. (3 credits; Prerequisite: one previous course in Philosophy.) The course will explore the "Phenomenological Movement" both historically and critically. An attempt will be made to identify the nature of Phenomenology, and to contrast it with other forms of Philosophy. The class will also consider the question of how Phenomenology became at some point "existential".
May 10 — May 28
10:30 — 12:30 daily
Professor di Giovanni

POLITICAL SCIENCE

160-221C THE GOVERNMENT OF CANADA. (6 credits.) An examination of the operation of parliamentary institutions in a federal state, and of the operation of federalism in Canada.
Dates: T.B.A.
Times: T.B.A.
T.B.A.

160-245L THE INTERNATIONAL SYSTEM. (3 credits.) The course will focus on the setting of world politics. Particular emphasis will be placed on the nature of contemporary international politics. The stratification of the international system to which differences in technology and military power, economic power, legitimacy, and skill contribute, will be treated as well as forces such as increasingly rapid communications, nationalism and ideology which cut across the system.
May 10 — May 28
15:30 — 17:30 daily
Professor Noble

160-300L COMPARATIVE REVOLUTION. (6 credits; Prerequisite: 160-227B or permission of the Instructor.) A course dealing with the post World War II revolutionary process in the Third World. Special attention will be devoted to the nature of the revolutionary process in the struggle for national liberation — examining these cases where this approach both succeeded and failed. Examples will be drawn in depth from Asia, Africa and Latin America. Students will be required to do a thorough case study.
May 10 — June 18
10:30 — 12:30 daily
Professor Noumoff

160-327C THE PRINCIPLES OF PUBLIC ADMINISTRATION. (3 credits.) An outline of the basic concepts employed in public administration will include organizational structure and behaviour, the concept of management and personnel development, the decision-making processes and the problems of change and innovation.
July 27 — August 13
Times: T.B.A.
T.B.A.

160-344L CONTEMPORARY INTERNATIONAL SYSTEMS — EUROPE. (3 credits; Prerequisites: Political Science 160-244A or 160-245B or consent of the Instructor. 160-246A would be helpful.) An examination of the evolution of the European system since 1945 focusing on three problem areas — East-West relations, the Atlantic Alliance and West European integration. Special attention will be paid to the policies of the U.S., Britain, France and West Germany.
June 1 — June 18
15:30 — 17:30 daily
Professor Noble

RUSSIAN AND SLAVIC STUDIES

141-220L RUSSIAN LANGUAGE. (6 credits; Prerequisite: first level or equivalent.) Intermediate reading, grammar, translation, oral practice.
May 10 — June 18
10:30 — 12:30 daily
Text: Davis and Oprendex, *Making Progress in Russian,* Wiley.
Professor Fodor

SOCIOLOGY

166-212L INTRODUCTION TO SOCIOLOGY. (3 credits.) The course will focus upon classical sociological studies and their impact upon more recent research. Included will be Durkheim on suicide and religion, Weber on capitalism and bureaucracy, and Marx/Engels on the status of women.
June 1 — June 18
10:30 — 12:30 daily
Professor Carroll

166-223L SOCIAL STRATIFICATION. (3 credits.) The theory of class divisions in modern society; the structure of class groups in the United States, Canada and the Third World; the criteria of rank and the symbols associated with rank; the relationship between occupation, education, religion and class position; social mobility.
June 1 — June 18
8:00 — 10:00 daily
Text: Heller, *Structured Social Inequality.*
Limited Registration
Professor Locher

166-315L SOCIOLOGY OF RELIGION. (3 credits.) The social determinants and consequences of religious beliefs and practices. Phenomenology of religion; prophets, priests and magicians. Folk religion and major world religions. Classical theories of the societal functions of religion including those of Marx, Weber and Durkheim. Religion in modern societies: secularization; religion and social class; functional alternatives to religion.
May 10 — May 28
8:00 — 10:00 daily
Texts: Newman, *The Social Meanings of Religion;* Berger, *The Sacred Canopy;* Weber, *The Protestant Ethic and the Spirit of Capitalism.*
Limited Registration
Professor Locher

SOCIAL WORK

The following summer courses may be taken by students registered in the BSW degree program in the School of Social Work. Students not registered in the School of Social Work must obtain the Instructor's permission in order to register for any of these summer courses. In consultation with their advisors, *current BSW students* may also take non-social work courses, offered during the summer at McGill. Advisors are available at the School of Social Work to assist students to select summer courses.

407-270L INTRODUCTION TO SOCIAL WORK RESEARCH. (3 credits; Prerequisite: an introductory course in statistics.) This is a modular course. It is intended to help students make effective use of published research reports and agency statistics, and to show them how to conduct simple research projects. It covers problem formulation, research design, data collection, analysis and interpretation, use of computer terminals and report writing.
May 10 — June 18
13:30 — 15:30 Tuesday and Thursday
Texts: 12 modules.
Professor Duder

407-352L SOCIAL SERVICES IN CANADA. (3 credits.) Introduction to the structure and operation of the basic public social services in Canada (income, housing, health) and to the social policy issues related to them.
May 10 — June 18
11:00 — 13:00 Monday and Wednesday
Texts: McGilly, F., *11 Modules specially prepared for the course,* Office of Educational Development, 1974.
Professor McGilly

407-353L INTRODUCTION TO SOCIAL WORK PRACTICE. (6 credits.) Introduction to the principles and practice of social work. Approaches to social problem identification and analysis. The role of the social worker as an agent of change or of social control. Elements of working with individuals, groups and communities. Laboratory periods will permit the application of course content to practice.
May 10 — June 18
9:00 — 11:00 Monday, Tuesday, Wednesday and Thursday
Limited Registration.
Professors Deehy and Reichertz

407-452L SOCIAL WELFARE ORGANIZATIONS AND DISADVANTAGED CLIENTELE. (3 credits.) Discussion of the ways in which social welfare organizations process clientele drawn from disadvantaged groups relative to clients drawn from more "privileged" groups. Strategies and tactics of organizational change are explored in detail.
June 1 — June 18
13:30 — 15:30 daily
Professor Deehy

407-458L SOCIAL POLICY AND ADMINISTRATION. (3 credits.) An analysis of policy issues which underlie selected social service programs; the administrative structure of such programs, their legislative base, their effectiveness and the role of professionals in the service delivery. Examples will be drawn from the current field experiences of students in the course.
May 10 — June 18
10:30 — 12:30 Monday and Wednesday
Professor Drover

407-480L FIELD INSTRUCTION-SOCIAL WORK. (6 credits.) Supervised educational experience in social work practice integrating practice with theoretical knowledge characteristic of the selected field. Individual and group instruction.
April 21 — June 25
Hours: T.B.A.
Limited Registration
Staff

407-482L SEMINAR ON SOCIAL WORK PRACTICE II. (3 credits.) Principles of Social Work Practice in working with individuals, families, small groups and communities. Methods of practice will be analyzed from a range of settings, drawing upon student field experience.
April 21 — June 25
Hours: T.B.A.
Limited Registration.
Professor Dalfen

FACULTY OF SCIENCE

Associate Dean: Dr. M. Herschorn

BIOLOGY

177-274L PRINCIPLES OF GENETICS. (3 credits; Prerequisites: Introductory Biology and Biology 201D.) This is an introductory course which considers theoretical and practical principles of genetics with an emphasis on man. Subject matter includes Molecular Genetics, Cytogenetics, Population, and Developmental Genetics.
June 1 — June 18
13:30 — 15:30 daily
Text: Winchester, *A Survey of the Principles of Heredity,* Houghton Mifflin Company, 1972.
Professor De Leon

177-305L ENVIRONMENTAL BIOLOGY. (3 credits; Prerequisite: Biology 205D.) An introduction to the principles of ecology dealing with individuals, populations and communities of plants and animals and concluding with a consideration of Man's relationship with the environment.
June 1 — June 18
10:30 — 12:30 daily
Text: Odum, C., *Fundamentals of Ecology,* W. B. Saunders, 1973.
Professor Glebe

177-370C GENETICS OF MAN. (3 credits; Prerequisites: Biology 201D and Genetics 177-274.) An advanced genetics course with emphasis on Medical Genetics. Subject matter include Biochemical Genetics, Genetics counselling, Cytogenetics and Social Genetics.
July 5 — July 23
13:30 — 15:30 daily
Text: Fraser, F. C., and Nora, J. J., *Genetics of Man,* Lea and Febiger, 1975.
Professor De Leon

CHEMISTRY

180-212L INTRODUCTORY ORGANIC CHEMISTRY I. (4 credits; Prerequisites: Chemistry 110A and 120B or equivalent courses.) A survey of reactions of aliphatic and aromatic compounds including modern concepts of bonding, mechanisms, conformational analysis and stereochemistry.
May 10 — June 4
8:00 — 10:00 daily
Text: Morrison and Boyd, *Organic Chemistry,* 3rd Ed., Allyn & Bacon, 1972.
Professors Chan and Ogilvie

180-212C INTRODUCTORY ORGANIC CHEMISTRY I. (4 credits; Prerequisites: Chemistry 110A and 120B or equivalent courses.) A survey of reactions of aliphatic and aromatic compounds including modern concepts of bonding, mechanisms, conformational analysis and stereochemistry.
July 5 — July 30
8:00 — 10:00 daily
Text: Morrison and Boyd, *Organic Chemistry,* 3rd Ed., Allyn & Bacon, 1972.
Professors Chan and Ogilvie

180-213L INTRODUCTORY PHYSICAL CHEMISTRY I. (3 credits; Prerequisites: Chemistry 120B or equivalent, plus 1 full course in calculus.) First law of thermodynamics, enthalpy, thermochemistry, bond energies. Second law of thermodynamics; the entropy and free energy functions. Chemical and thermodynamic equilibrium states. Phase rule. Colligative properties of ideal solutions. Electrochemistry, electrochemical cells. Liquid and liquid surfaces. Chemical kinetics.
June 1 — June 25
10:30 — 12:30 daily
Pre-sessional readings: Lecture notes available from the Department.
Professor Galley

180-222C INTRODUCTORY ORGANIC CHEMISTRY II. (4 credits; Prerequisite: Chemistry 180-212A, B, C, or equivalent.) Modern spectroscopic techniques for structure determination. The chemistry of alkyl halides, alcohols, ethers, carbonyl compounds and amines with special attention to mechanistic aspects. Special topics.
July 5 — July 30
8:00 — 10:00 daily
Text: Morrison and Boyd, *Organic Chemistry,* 3rd. Ed., Allyn & Bacon, 1972, *OR* Brown, *Organic Chemistry,* Wadsworth.
Professor Farrell

180-281C CHEMISTRY OF THE MAIN GROUP ELEMENTS. (3 credits; Prerequisites: Chemistry 110A and 120B or equivalents.) The course deals with the chemistry of selected main group elements and their role in our everyday lives. The course is based on a series of self-study modules; a minimum of three background modules (on atomic structure and chemical bonding) and five other modules chosen by the student must be completed.
July 5 — July 23
No formal hours
First meeting: 13:30, July 5
Limited Registration
Professor Butler

180-301C MODERN INORGANIC CHEMISTRY II. (3 credits; Prerequisites: Chemistry 110A and 120B or equivalents.) Modern concepts of metallic bonding and metallic crystals will be reviewed and extended to include descriptions of crystal field theory and molecular orbital theory of coordination compounds. The chemistry of transition metal coordination will be treated in some detail from the viewpoint of structural, chemical and mechanistic behaviour.
July 27 — August 13
10:30 — 12:30 daily
Professor Hogan

180-311C INTRODUCTION TO RADIOCHEMISTRY. (3 credits; Prerequisites: Chemistry 180-110A and 180-120B.) The basic fundamentals of radiochemistry. Radioactive decay, counting techniques, radioactive tracer studies, carbon-14 dating, and applications.
July 5 — July 23
8:00 — 10:00 daily
Professor Hogan

180-624C SPECIAL TOPICS IN ORGANIC CHEMISTRY. (half course; Prerequisite: Permission of the Department of Chemistry.) An advanced course in organic chemistry, designed to provide detailed introduction to a variety of special topics, e.g. medicinal chemistry, photochemistry, food chemistry.
July 5 — July 23
10:30 — 12:30 daily
Professor Farrell

COMPUTER SCIENCE

308-200L INTRODUCTION TO COMPUTER SCIENCE. (3 credits; Prerequisite: 189-121.) Number systems, data representation, algorithm design. FORTRAN; computer methods including sorting, searching, solutions of equations, numerical integration and matrix manipulation.
May 10 — May 28
10:30 — 12:30 daily
Text: Cress, Paul and Dirkson, *Fortran IV with WATFOR and WATFIV,* Prentice Hall.
Professor Anathanarayanan

308-210L COMPUTER STRUCTURE AND ASSEMBLY LANGUAGE PROGRAMMING. (3 credits; Prerequisite: 308-080A or 308-200.) Computer structure, machine language, instruction execution, addressing techniques and digital representation of data Symbolic coding, assembly sys-

tems, macro definition, program segmentation and linkage.
June 1 — June 18
10:30 — 12:30 daily
Text: IBM, *Principle of Operations/360,* IBM.
Professor Ratzer

308-220L DIGITAL COMPUTING FOR STATISTICAL ANALYSIS. (3 credits; Prerequisite: 166-305A, 189-231A, or 204-204A.) The course introduces the student to computers and to their uses in the solution of statistical problems. Number systems, data representation, characteristics of a high-level programming language (FORTRAN). Methods of computer solution of statistical problems, random numbers, games of chance, simulation.
May 10 — May 28
10:30 — 12:30 daily
Mr. M. Cohen

308-230L COMPUTERS IN DATA PROCESSING. (3 credits; Prerequisite: 308-200 or equivalent programming experience.) Uses of computers in data processing, COBOL; job control language; system utility programs including sort/merge; file processing; comparison of languages in business oriented applications.
May 10 — May 28
10:30 — 12:30 daily
Text: Lindahl, *Introduction to American National Standard COBOL,* Cummings.
Professor Burrage

GEOGRAPHY

183-319C GEOGRAPHY OF ECONOMIC DEVELOPMENT. (3 credits; Prerequisite: Geography 214A, or 216A, or 217B, or permission of Instructor.) Analysis of the role of geography in the field of economic development; growth and development theories on different geographic scale levels; behaviour of selected economic activities in change process; regional economic development in relation to changing resource utilization; development planning.
July 5 — July 23
10:30 — 12:30 daily
Professor Armstrong

183-321C CLIMATIC ENVIRONMENTS. (3 credits; Prerequisite: Geography 203D or Meteorology 210D or permission of Instructor.) Scope of climatology, physical, dynamic and applied. The earth/atmosphere system, radiation and energy balances, governing meteorological processes. Movement and circulation of the atmosphere on a local and global scale. Resulting weather systems.
Dates: T.B.A.
Times: T.B.A.
Professor Phillips

183-333L MONTREAL URBAN FIELD STUDIES. (3 credits; Prerequisite: An introductory geography course or permission of Instructor.) Encounters with social and physical environments of Montreal. A phenomenology of the city. This course has a modular organization with weekly individual field exploration by class members.
May 10 — May 28
16:00 — 18:00 daily
Professor Lewis

183-404C CONTEMPORARY GEOGRAPHY. (6 credits; Prerequisites: Introductory university courses in physical and human geography.) An analysis of the main branches of modern geography with emphasis on theoretical and methodological developments.
July 5 — August 13
8:00 — 10:00 daily
Professor Walford

MATHEMATICS

189-121C CALCULUS II. (3 credits; Prerequisite: 189-120A.) The definite integral. Techniques of antidifferentiation. Applications.
July 5 — July 23
8:00 — 10:00 daily
T.B.A.

189-203L PRINCIPLES AND METHODOLOGY OF STATISTICS I. (3 credits.) Examples of statistical data and graphical means to summarize the data. Basic distributions from natural and behavioural sciences. The logical meaning of a test of significance with applications. The analysis of categorical and frequency data.
May 10 — May 28
10:30 — 12:30 daily
Professor Wolfson

189-221C ANALYTICAL GEOMETRY AND VECTORS. (3 credits; Prerequisite: 189-121A,B.) Vectors, lines and planes, coordinate systems in three dimensions, inner products, quadric surfaces, vector-valued functions. Applications.
July 5 — July 23
10:30 — 12:30 daily
T.B.A.

189-222C CALCULUS III. (3 credits; Prerequisite: 189-221A,B.) Infinite Series. Length, curvature; partial differentiation, multiple integration and applications.
July 27 — August 13
10:30 — 12:30 daily
T.B.A.

189-245C LINEAR ALGEBRA I. (3 credits.) Simultaneous linear equations. Matrices. Trace and determinant. Quadratic forms. Orthogonal matrices. Characteristic roots and vectors.
July 5 — July 23
13:30 — 15:30 daily
T.B.A.

189-315C DIFFERENTIAL EQUATIONS I. (3 credits; Prerequisite: 189-222A,B.) First order ordinary differential equations. Linear equations with

constant coefficients. Laplace transform. Series solutions.
July 27 — August 13
8:00 — 10:00 daily
T.B.A.

PHYSICS

198-102L ELECTROMAGNETISM. (4 credits; Prerequisites: 198-101A,B, and 189-120A,B,C.) A course for Biological Sciences and Pre-Medical Students. Electric field and potential. D.C. circuits and measurements. Capacitance. Magnetic field and induction. Semiconductor devices and their application. Feedback and control systems. Electromagnetic waves. This course, together with 198-101A,B satisfies (a) Physics requirements for Medical School; (b) minimum B.Sc. requirements for post-matriculation Physics.
June 1 — June 18
Lectures: 9:00 — 11:00 daily
Labs.: 11:00 — 13:00 daily
Mrs. Gurr

198-122L ELECTRICITY AND MAGNETISM. (3 credits; Prerequisites: 198-121A,B, and 189-121A,B.) The basic laws of electromagnetism; electrical measurements; direct current circuits.
June 1 — June 18
10:30 — 12:30 daily
Five Laboratory Periods T.B.A.
Text: Sears, F.W., *Electricity and Magnetism,* Addison Wesley.
T.B.A.

PHYSIOLOGY

552-502C EXERCISE PHYSIOLOGY. (3 credits; Prerequisite: Physiology 211D or its equivalent.) Behaviour of physiological processes in response to physical effort. Explores such areas as mechanics and energetics of muscle contraction, aerobic and anaerobic work, fuel utilization during exercise, metabolic, cardiovascular and respiratory adaptation, evaluation of functional capacity and exercise testing.
July 5 — July 23
10:30 — 12:30 daily
Text: Klissouras, V., *Ergophysiology,* McGill Printing, 1973.
Professor Klissouras

PSYCHOLOGY

204-201C BASIC ISSUES IN PSYCHOLOGY. (6 credits.) This course deals with the social and biological basis of motivation, emotion, perception, learning and thinking with special emphasis on the nature of man and his relation to society.
July 5 — August 13
10:30 — 12:30
Professor Morgan

204-204C INTRODUCTION TO PSYCHOLOGICAL STATISTICS. (3 credits.) The statistical analysis of psychological data; frequency distributions; graphic representation; measures of central tendency and variability; elementary probability theory; the normal probability curve; simple correlation methods; elementary sampling theory and tests of significance.
July 5 — July 23
10:30 — 12:30 daily
Text: Ferguson, G.A., *Statistical Analysis in Psychology and Education,* 3rd Ed., McGraw-Hill.
Professor Reed

204-211L LABORATORY METHODS IN PSYCHOLOGY. (3 credits; Prerequisite: An introductory course in Psychology.) Working in groups of four, students select three problems for experimental study. Each problem will be carried through planning and data collection to analysis of results and a written report.
June 1 — June 18
8:00 — 10:00 daily
Text: Johnson, H.H. and Solso, R.L., *An Introduction to Experimental Design in Psychology: A Core Approach,* Harper and Row, 1971.
Limited Registration
Professor Donderi

204-300L MOTIVATION I. (3 credits; Prerequisite: An introductory course in Psychology (CEGEP level) or 204-201D.) Motivation is considered in terms of the internal and external factors which act to direct behaviour. Basic principles are developed, based on material from human and animal behaviour. As the emphasis is on the evolutionary development of the principles, most of the material considered is based on the animal literature.
May 10 — May 28
8:00 — 10:00 daily
Texts: Cofer, *Motivation and Emotion,* Scott Foreman, 1972, and Bindra and Stewart (eds.), *Motivation,* Penguin, 1971.
Professor N. White

204-301L LEARNING I. (3 credits; Prerequisite: An introductory course in Psychology.) The phenomena of learning, with emphasis on their nature and application in humans. For example: massed and distributed practice, motor learning, transfer, incidental learning, reward and punishment, secondary reinforcement, knowledge of results, learning set, learning to read, optimum strategies in learning.
May 10 — May 28
8:00 — 10:00 daily
Professor Donderi

204-302C PERCEPTION. (3 credits; Prerequisite: Introductory Psychology.) Perception is the organization of sensory input into a representation of the environment. We discuss the nature of this process, drawing on evidence from neurophysiology, computer simulation, and human experimental psychology.

July 5 — July 23
8:00 — 10:00 daily
Text: Lindsay, P.F., and Norman, D.A., *Human Information Processing,* (Chapters 1 — 7), Academic Press, 1972.
Professor Corballis

204-303C THINKING. (3 credits; Prerequisite: 204-302A.) Thinking is the ability to respond to more than the immediate environment. Specific topics include short-term and long-term memory, the neural basis of memory, language, problem solving, decision making.
July 27 — August 13
8:00 — 10:00 daily
Lindsay, P.F. and Norman, D.A., *Human Information Processing,* (Chapters 8 — 15), Academic Press, 1972.
Professor Corballis

204-304L CHILD PSYCHOLOGY. (6 credits; Prerequisite: A full introductory psychology course or equivalent.) A study of current theory and knowledge about psychological processes in children, with particular attention to the development of intelligence, language, and social behaviour.
May 10 — June 18
10:30 — 12:30 daily
Text: Mussen, Conger and Kagan, *Child Development and Personality,* 4th Ed., Harper and Row, 1974.
Professor Shultz

204-330C INTRODUCTION TO SOCIAL PSYCHOLOGY. (3 credits.) A survey of major concepts in Social Psychology including cognitive processes (attitudes, stereotypes, prejudice) and social influence processes (norms, roles, group relations).
July 5 — July 23
10:30 — 12:30 daily
Text: Aronson, E., *The Social Animal,* Freeman.
Professor Taylor

204-332C INTRODUCTION TO PERSONALITY. (3 credits; Prerequisite: Introductory Psychology.) A broad survey of theories of personality. The student is introduced to most of the major theoretical positions.
July 5 — July 23
10:30 — 12:30 daily
Professor McCall

204-337L INTRODUCTION TO ABNORMAL PSYCHOLOGY. (3 credits; Prerequisite: An introductory course in Psychology, e.g. Psychology 350-101 in the CEGEP system.) The course proposes to familiarize students with the major theoretical models of abnormal behaviour and their development, methods of assessment and classification of abnormal behaviour, scientific methods of studying abnormal behaviour and a comparative model analysis of neurotic disorders.
May 10 — May 28
10:30 — 12:30 daily
Text: Zax, Melvin and Cohen, Emory, *Abnormal Psychology: Changing Conceptions,* Holt, Rinehart & Winston, 1972.
Professor Piper

204-338L BEHAVIOUR PROBLEMS. (3 credits; Prerequisite: 204-337.) Theoretical concepts of schizophrenia and other psychoses, of personality disorders and psychopathic behaviour--in historical perspective. Approaches to treatment and prevention in the past, present and future.
June 1 — June 18
8:00 — 10:00 daily
Text: Zax, Melvin and Cohen, Emory, *Abnormal Psychology: Changing Conceptions,* Holt, Rinehart & Winston, 1972.
Limited Registration
Professor Gutbrodt

204-433C SELECTED TOPICS IN PERSONALITY. (3 credits; Prerequisite: Psychology 332.) An intensive study of the behavioural approach to personality. The emphasis is on a functional approach to personality.
July 27 — August 13
10:30 — 12:30 daily
Professor McCall

FACULTY OF AGRICULTURE

Associate Dean and Registrar: Dr. Jean David

There will be ONE registration day at Macdonald College: July 5 from 9:00 to 17:00 hrs., in the Registrar's Office, Main Building, Macdonald College, Ste. Anne de Bellevue.

The registration procedure is in all ways identical to that outlined in the Registration section of this Announcement. Students from other faculties wishing to attend one or more of the courses offered by the Faculty of Agriculture may, after securing the authorization of the Associate Dean of their faculty, register in the Summer Session Office or in Redpath Hall if it is more convenient for them.

Une seule journée d'inscription sera tenue au collège Macdonald: le 5 juillet de 9:00 à 17:00 heures, au bureau du Registraire, édifice principal, collège Macdonald, Ste. Anne de Bellevue.

Les procédures à suivre sont identiques à celles expliquées à la rubrique "Inscription" de cet annuaire. Les étudiants qui sont intéressés à suivre des cours offerts par la faculté d'agriculture peuvent, après avoir reçu l'approbation du vice-doyen de leur faculté, s'inscrire soit au bureau de la Session d'été, soit au pavillon Redpath si cela leur convient mieux.

DEPARTMENT OF AGRICULTURAL ENGINEERING

336-214L SURVEYING. (2 credits; Prerequisite: High school or CEGEP Trigonometry). Use of engineer's tape, level, transit, plane table, hand level, and compass for land measurement, differential leveling, topographic mapping, surveying computations and preparation of plans.
April 26 — May 7
8:30 — 17:00 including lectures and field work
Text: Breed, Charles B., *Surveying,* 2nd edition, John Wiley and Sons, 1971.
Professor Broughton

Students intending to attend 336-214L SURVEYING may register up to and including April 26, either at Macdonald College (Registrar's Office, Main Building) or at the Summer Session Office (McGill Campus). A nonrefundable late fee of $10.00 will be charged on April 27 and 28. No registrations will be accepted after April 28 for this course.

DEPARTMENT OF AGRONOMY

340-350C EXPERIMENTAL METHODS IN AGRONOMY. (2 credits; Prerequisite: CEGEP Science or equivalent.) Techniques of handling agronomic plants for food and feed under experimental conditions in the field, greenhouse and controlled environment rooms. Crop hybridization. Planning and preparing test plots. Establishing, managing, harvesting and processing crop research materials. Recording and analysing data from crop measurements. Preparation of reports.
July 12 — July 24
8:00 — 9:00 and 13:00 — 14:00 daily
Labs. T.B.A.
Limited Registration
Professor Steppler and Staff

DEPARTMENT OF BIOLOGY

344-205L PRINCIPLES OF ECOLOGY. (3 credits; Prerequisite: some background in Biology.) Ecological principles will be discussed at the level of the individual, the population and the community. A Field Laboratory on collecting methods in animal ecology.
June 1 — June 18
10:30 — 12:30 daily
Text: Kormondy, E.J., *Concepts of Ecology,* Prentice Hall.
Professor Stewart

DEPARTMENT OF HORTICULTURE

358-332C LANDSCAPE ARCHITECTURE. (3 credits.) Description, characteristics, and identification of ornamental plants, nursery practices and care of plant material; brief history of gardens and architecture; landscape design, plans, sketches, drafting, construction specifications, as applied to rural and urban homes, estates, parks and playgrounds, etc.
July 27 — August 13
13:30 — 15:30 daily
Limited Registration
Mr. Perron

DEPARTMENT OF RENEWABLE RESOURCES

370-341C THE URBAN COMMUNITY. (3 credits; Prerequisite: An introductory course in Sociology.) Population phenomena and their implications for the organization of society. Human Ecology. The structure of urban communities in industrial and developing countries. Urban planning. City government. Social institutions in the urban setting.
July 5 — July 23
13:30 — 15:30 daily
Texts: Assigned readings.
Professor Chevrier

372-230C THE PHYSICAL ENVIRONMENT. (3 credits.) Description and classification of soils, geomorphology and landscape, organic matter, water and nutrients. The hydrologic cycle, surface drainage, ground water, water quality. Energy balance at the ground surface, evaporation, temperature regimes, freezing temperatures, micro-climate, meteorological records.
July 5 — July 23
8:00 — 10:00 daily
Text: Bockman and Brady, *Nature and Properties of Soils.*
Professors Broughton and MacKenzie

374-210C METHODS OF ENVIRONMENTAL INTERPRETATION. (3 credits.) For people interested in conducting effective field study trips; organization and operation of studies, class preparation, field methods, basic information and sources, functions of tour guides, utilization of different study areas, special problems and possibilities for follow-up class work. Field work at the Morgan Arboretum and the Gault Estate.
July 5 — July 23
10:30 — 12:30 daily
Pre-Sessional Reading: Leopold, Aldo, *Sand County Almanac.*
Professor Fillmore

375-333C PHYSICAL AND BIOLOGICAL ASPECTS OF POLLUTION I. (3 credits.) Sources, amounts and transport of pollutants in water, air and soil; effects of pollutants on plants; genetic effects; degradation and recycling of pollutants; waste disposal and recycling; economics of pollution control; environmental quality legislation in Canada.
July 5 — July 23
10:30 — 12:30 daily
Text: Masters, G.M., *Introduction to Environmental Science and Technology,* Wiley, 1974.
Professor Warkentin and guest lecturers

FACULTY OF ENGINEERING

Associate Dean: Professor W. Bruce

CHEMICAL ENGINEERING

302-614L APPLIED TRANSPORT PHENOMENA. (Half course; Prerequisites: 302-611A, Heat, Mass and Momentum Transport or equivalent with Instructor's permission.) Mathematical modeling of heat, mass and momentum transport in physical systems, analytical and computational techniques for solution of transport problems, applications in various industrial processes (topics to be selected based on student interest.)
May 10 — June 18
17:30 — 20:30 Thursday
Professor Mujumdar

302-695L PROJECT IN CHEMICAL ENGINEERING. (Full course; Prerequisites: Registration in M.Eng. Option B program and Department approval.) Independent work, under the general direction of a full-time staff member of the Chemical Engineering Department, on a problem of industrially-oriented design or research. The work must lead to a comprehensive project report.
May 10 — June 18
Students will be assigned an Instructor by the Chemical Engineering Department.

302-696L EXTENDED PROJECT. (Full course; Prerequisites: Registration in M.Eng. Option B program and approval of Department.) Extended independent work on a problem of industrially-oriented design or research, leading to a comprehensive project report.
May 10 — June 18
Students will be assigned an Instructor by the Chemical Engineering Department.

302-783L SPECIAL TOPICS IN POLYMER ENGINEERING. (Half course; Prerequisite: 302-682B, Engineering Properties of Polymers and Composites or equivalent with Instructor's permission.) Polymer-based composites (glass fiber-reinforced plastics, reinforced thermoplastics, rigid and rubbery foams, carbon black-reinforced rubbers, etc.). Fabrication processes and engineering properties. Emphasis on structure-properties relationships.
May 10 — June 18
18:00 — 20:00 Monday and Wednesday
Professor Charrier

MECHANICAL ENGINEERING

The Department of Mechanical Engineering will offer three courses for the benefit of their students in their U1 year. Students interested in these courses MUST contact the Department of Mechanical Engineering BEFORE THE END OF MARCH (please see notices posted in the Department of Mechanical Engineering). Students MUST then register in the normal way at the Summer Session Office up to and including May 6 for the courses starting on that date and May 18 for the course starting on that date. Students will be allowed to register late (a non-refundable $10.00 late registration fee will be charged) on May 7 and 10 for the first courses and May 19 and 20 for the last course. No registrations will be accepted for these courses after May 10 and May 20 respectively.

FACULTY OF MANAGEMENT

Associate Dean: Dr. A.D. Teitlebaum

271-311L FINANCIAL ACCOUNTING I. (3 credits; Prerequisite: 280-212.) A detailed examination of the problems of measurement, recording and reporting of assets and related revenues and expenses.
May 10 — June 25
18:00 — 21:00 Tuesday and Thursday
Professor Falk

271-312C FINANCIAL ACCOUNTING II. (3 credits; Prerequisite: Financial Accounting I.) A continuation of Financial Accounting I, examining problems of liabilities and owner's equity.
July 5 — August 20
18:00 — 21:00 Tuesday and Thursday
Professor Falk

273-332L COMPUTER BASED INFORMATION SYSTEMS. (3 credits; Prerequisite: 280-331.) Methodology, techniques and components of systems design and programming, with emphasis on management information systems.
May 10 — June 25
18:00 — 21:00 Tuesday and Thursday
Professor E. Smith

274-342L FINANCE II. (3 credits; Prerequisite: Finance I 280-341.) A presentation of the modern theory of Finance. A foundation is established here from which students may pursue further specialization or from which specialists in other areas may appreciate their interaction with the Finance function. The theory covers three interrelated finance functions: capital budgeting, corporate finance (including cost of capital, capital structure, and dividend policy), and portfolio theory. An analytic approach is taken where objectives are specified, constraints recognized and the resource allocation of capital on both personal and corporate levels investigated.
May 10 — June 25
18:00 — 21:00 Tuesday and Thursday
Professor Fowler

275-451L MARKETING RESEARCH. (3 credits; Prerequisite: 280-352.) Training in the design, execution and interpretation of survey and experimental methods in marketing. Emphasis is placed upon sample design, data collection and data processing; evaluation of alternative, experimental designs, execution of problems and interpretation

of data. A review of illustrative research studies is made: an actual study is designed and data are collected and interpreted.
May 10 — June 25
18:00 — 21:00 Monday and Wednesday
Professor Gruber

278-382L INTERNATIONAL BUSINESS MANAGEMENT. (3 credits.) An introduction to cultural, economic and political aspects of domestic, international and foreign environments and their effects on the international operations of business firms.
May 10 — June 25
18:00 — 21:00 Monday and Wednesday
Professor Wright

278-384L BUSINESS LAW. (6 credits.) Law of contract, sale, agency, partnership, company law and negotiable instruments.
May 10 — August 20
18:00 — 21:00 Monday and Wednesday
Professor Audet
Professor Leblanc

279-294L INTRODUCTION TO INDUSTRIAL RELATIONS. (3 credits.) An introduction to the problems of labour-management relations, the structure, function and government of labour unions, labour legislation, the collective bargaining process, and the public interest in industrial relations.
May 10 — June 25
18:00 — 21:00 Monday and Wednesday
Professor Woods
Professor Bairstow

280-211L ACCOUNTING I. (3 credits.) An introduction to business accounting, considered as an information system serving the decision needs of investors and lenders, and as an aid to management in the planning and control of operators (Management accounting).
May 10 — June 25
18:00 — 21:00 Tuesday and Thursday
T.B.A.

280-212C ACCOUNTING. (3 credits.) For students intending to specialize in the subject. An introduction to the elements of financial accounting and accounting theory.
July 5 — August 20
18:00 — 21:00 Tuesday and Thursday
T.B.A.

280-222L ORGANIZATIONAL BEHAVIOUR. (3 credits; Prerequisite: 280-221.) The social psychology of organizations, the relationship of man to the organization in which he works, his motivation, attitudes and involvement in his work. Theories of perception, motivation and leadership as they relate to organizational problems.
May 10 — June 25
18:00 — 21:00 Monday and Wednesday
T.B.A.

280-271L STATISTICS I. (3 credits; Prerequisite: Calculus I.) Introduction to statistical concepts and methodology, demonstrating their application to management problems, and constituting a foundation for further study in the subject. Includes: descriptive statistics and statistical inference, probability theory, random processes, some important discrete and continuous probability distributions, sampling distributions, decision theory, index numbers.
May 10 — June 25
18:00 — 21:00 Tuesday and Thursday
Professor Teitlebaum

280-272C STATISTICS II. (3 credits; Prerequisite: Statistics I.) Decision theory, hypothesis testing and estimation, goodness of fit tests, analysis of variance, sample surveys and experimental design, simple and multiple regression and correlation analysis, time series.
July 5 — August 20
18:00 — 21:00 Tuesday and Thursday
Professor Yalovsky

280-323C ORGANIZATIONAL THEORY. (3 credits; Prerequisite: 280-222.) The organization as a unit of analysis. Analysis of organizations as distinctive collectivities through an understanding of theories and problems of organization. Contributions of psychology, sociology and economics towards solving organizational problems of adaptation, authority and power, conflict resolution, etc.
July 5 — August 20
18:00 — 21:00 Monday and Wednesday
Professor Burnett

280-331L MANAGEMENT INFORMATION SYSTEMS I. (3 credits.) To provide an introduction to computer systems and program flowcharting. Specific emphasis is placed on developing the ability to program (FORTRAN) and utilize the resources available on the McGill time-sharing system. Problems of implementing computer systems in the organization are discussed.
May 10 — June 25
18:00 — 21:00 Tuesday and Thursday
Mr. Kerklaan

280-341C FINANCE I. (3 credits; Prerequisites: 280-211 or 280-212.) An introduction to financial management and the role of finance, both within the organization and the economy as a whole. Financial decision-making as it applies to diverse types of organizations. The main topics considered are investment decisions, financing and asset management.
July 5 — August 20
18:00 — 21:00 Tuesday and Thursday
T.B.A.

280-352L MARKETING MANAGEMENT. (3 credits.) This course focuses on the problems of the marketing manager in the measurement of market opportunity and the allocation of marketing effort. Emphasis is placed on analytical techniques based

on the behavioural sciences, economics, accounting and management science that can be of use to marketing managers in the development of effective marketing plans.
May 10 — June 25
18:00 — 21:00 Monday and Wednesday
Professor Gross

280-352C MARKETING MANAGEMENT. (3 credits.) This course focuses on the problems of the marketing manager in the measurement of market opportunity and the allocation of marketing effort. Emphasis is placed on analytical techniques based on the behavioural sciences, economics, accounting and management science that can be of use to marketing managers in the development of effective marketing plans.
July 5 — August 20
18:00 — 21:00 Monday and Wednesday
T.B.A.

280-373C OPERATIONS RESEARCH I. (3 credits; Prerequisites: Applied Matrix Algebra or Linear Algebra, Statistics I and Calculus I.) An introduction to applications of mathematical model building and analysis in managerial decision-making, including: mathematical programming (linear programming and network analysis); simple stochastic processes including waiting lines and inventory systems; simulation.
July 5 — August 20
18:00 — 21:00 Tuesday and Thursday
T.B.A.

280-393C MANAGERIAL ECONOMICS. (3 credits; Prerequisite: Introduction to Economics.) The course focuses on the application of economic theory to management problems and the economic foundations of marketing, finance and production. Attention is given to the following topics: price and cost analysis, demand and supply analysis.
July 5 — August 20
18:00 — 21:00 Monday and Wednesday
Professor Gordon

FACULTY OF MUSIC

Summer Session Coordinator: Professor B. Minorgan

MUSIC THEORY

211-110C MELODY AND COUNTERPOINT. (3 credits; Prerequisite: McGill Preparatory Theory Secondary V *OR* its equivalent.) A study of melody, both as a single line and in combination with other lines, through an analysis of melodies from various eras and cultures, and of two-part counterpoint, especially the styles and techniques of 20th Century counterpoint; written exercises in melody and two-part counterpoint will be required.
July 5 — July 23
10:30 — 12:30 daily
Texts: Walton, C.W., Ed., *Music Literature for Analysis and Study,* Wadsworth Publishing Co., and Siegmeister, Elie, *Harmony and Melody,* Volume 1: *Diatonic Style,* Wadsworth Publishing Co.
Limited Registration
Mr. Belkin

211-111C ELEMENTARY HARMONY. (3 credits; Prerequisite: 211-110 Melody and Counterpoint.) This course will cover diatonic chords, harmonic progression, the concept and practice of tonality, simple modulation, seventh chords and secondary dominants; small forms from ca. 1700 to the early 19th Century will be analyzed; written four-part exercises will be required.
July 27 — August 13
10:30 — 12:30 daily
Texts: Walton, C.W., Ed., *Music Literature for Analysis and Study,* Wadsworth Publishing Co., and Siegmeister, Elie, *Harmony and Melody,* Volume 1: *Diatonic Style,* Wadsworth Publishing Co.
Limited Registration
Mr. Belkin

212-231L EAR TRAINING (FIXED DOH). (4 credits; Prerequisites: 212-131D Ear Training (Fixed Doh) and either 211-224D Tonal Theory and Analysis or 213-240D Tonal Composition.) Sightsinging of melodies of medium complexity using all clefs; aural analysis of cadence types, simple modulations and form of moderately complex material; melodic, rhythmic, two-part contrapuntal, and harmonic dictation of medium difficulty; introduction to atonal materials.
May 10 — July 2
17:00 — 18:30 daily
Texts: Benward, Bruce, *Workbook in Ear Training,* Wm. C. Brown; Berkowitz, Fontrier, and Kraft, *A New Approach to Sightsinging,* W. W. Norton; Lavignac, *Solfège des Solfèges 3A,* Leroux; Hindemith, Paul, *Elementary Training for Musicians,* Schott.
Limited Registration
Ms Beckett

212-331L EAR TRAINING (FIXED DOH). (4 credits; Prerequisite: 212-231D Ear Training (Fixed Doh).) Sightsinging of exercises of melodic and rhythmic complexity involving remote modulation; treble, alto, tenor, soprano, and bass clefs will be employed; melodies in mixed clefs; atonal melodies; vocal and instrumental literature of all periods with emphasis on the 20th Century; advanced aural analysis; advanced melodic, rhythmic and harmonic dictation.
May 10 — July 2
17:00 — 18:30 daily
Texts: Benward, Bruce, *Workbook in Advanced Ear Training,* Wm. C. Brown, and Edlund, Laars, *Modus Novus,* Selling Agent: Alexander Broude, Inc.
Limited Registration
Professor Zuk

213-241C ELECTRONIC MUSIC. (3 credits.) A course for non-composers; introduction to recording techniques, microphones, splicing, wave

shapes, mixing, filtering, development techniques, spatial considerations, etc.; historical survey of musique concrète and electronic music; analysis and discussion of representative works.
July 5 — July 23
10:30 — 12:30 daily
Texts: Trythall, G., *Principles and Practice of Electronic Music,* and Strange, Allen, *Electronic Music.*
Limited Registration
Professor Bertoncini

213-242C ELECTRONIC MUSIC. (3 credits; Prerequisite: 213-241 Electronic Music.) A continuation of 213-241C Electronic Music; introduction to modulation techniques, voltage control, synthesizers, live electronics, mixed media, etc.; further analysis and discussion of representative works.
July 27 — August 13
10:30 — 12:30 daily
Texts: Trythall, G., *Principles and Practice of Electronic Music,* and Strange, Allen, *Electronic Music.*
Limited Registration
Professor Bertoncini

SCHOOL MUSIC

221-353C ORFF METHOD AND WORKSHOP. (2 credits; Prerequisites: 212-230D or 212-231D Ear Training; and 211-224D Theory and Analysis; OR permission of the Instructor.) An introduction to the teaching theories and philosophy of the renowned composer and music educator, Carl Orff. Throughout the course, Orff's approach will be discussed in relation to other current influences in music education.
July 5 — July 23
10:30 — 12:30 daily
Text: Hall, Doreen, and Walter, Arnold, *Music For Children,* Book 1, Schott. (Copies available from the Department of School Music, 392-4552.)
Limited Registration
Mrs. Golden

FACULTY OF RELIGIOUS STUDIES

Dean: Dr. J.C. McLelland

260-280L INTRODUCTION TO NEW TESTAMENT GREEK. (6 credits.) An introduction to the Greek of the New Testament.
May 10 — June 18
18:00 — 20:00 daily
Text: Machen, J.G., *New Testament Greek for Beginners,* MacMillan, 1956.
Professor Kirby

260-345L RELIGION AND THE ARTS. (3 credits.) The presupposition of this course is that religion is the dimension of depth in our cultural life. With this in mind we will examine the writings of e.g. Eliot, Camus, Sartre, to see how they view the human condition and how they express this religious dimension.
June 1 — June 18
16:00 — 18:00 daily
Professor Carpenter

260-496L SPECIAL STUDIES. (3 credits; Prerequisite: Some introductory familiarity with Christian theology is recommended.) The topic for the 1976 Summer Session: The Theology of Dietrich Bonhoeffer. A biographical and thematic examination of some of the principal theological writings of Bonhoeffer and an attempt to assess their significance for subsequent theological development.
May 10 — May 28
16:00 — 18:00 daily
Pre-sessional Reading: Bonhoeffer, Dietrich, *Letters and Papers from Prison,* (new expanded edition) New York, MacMillan, 1972.
Texts: Bonhoeffer, Dietrich, *Christ the Centre;* Bonhoeffer, Dietrich, *The Cost of Discipleship;* Bonhoeffer, Dietrich, *Ethics.*
Limited Registration
Mr. Hampson

260-641L RELIGION AND THE ARTS. (Half Course.) The presupposition of this course is that religion is the dimension of depth in our cultural life. With this in mind we will examine the writings of e.g. Eliot, Camus, Sartre, to see how they view the human condition and how they express this religious dimension.
June 1 — June 18
16:00 — 18:00 daily
Professor Carpenter

ISLAMIC STUDIES

397-200L ELEMENTARY ARABIC. (6 credits; Prerequisite 397-100D or equivalent.) Arabic grammar. Readings from modern and classical writings emphasizing controlled vocabulary and grammatical structure. Simple composition.
May 10 — June 18
10:30 — 12:30 daily
Texts: Ziadeh, Farhat, *A Reader in Modern Literary Arabic,* Princeton University Press, 1964; Haywood, J.A., and Nahmad, H.M., *A New Arabic Grammar,* Harvard University Press, 2nd ed., 1965.
Limited Registration
Professor Boullata

397-622L LOWER INTERMEDIATE ARABIC. (Full course; Prerequisite 397-100D or equivalent.) Arabic grammar. Readings from modern and classical writings emphasizing controlled vocabulary and grammatical structure. Simple composition.
May 10 — June 18
10:30 — 12:30 daily
Texts: Ziadeh, Farhat, *A Reader in Modern Literary Arabic,* Princeton University Press, 1964; Haywood, J.A., and Nahmad, H.M., *A New Arabic Grammar,* Harvard University Press, 2nd ed., 1965.
Limited Registration
Professor Boullata

FACULTY OF EDUCATION

Associate Deans: Professors R. Boulianne and D. Burgess

Bachelor of Education for certified teachers (Elementary).

Admission requirements:

a) Applicants must hold a teaching certificate valid in the Province of Quebec, or its equivalent.

b) Applicants must have a Quebec Diploma of Collegial Studies standing or its equivalent (i.e. a minimum of 13 years of attested study). Inquiries regarding course selection should be addressed to:

Professor R.G. Boulianne
B.Ed. Co-ordinator (Part-time students)
McGill University
Faculty of Education
3700 McTavish St.
Montreal, Quebec H3A 1Y2

Candidates wishing to enrol in the B.Ed. program must apply to:

Student Affairs Office
Faculty of Education
McGill University
3700 McTavish St.
Montreal, Quebec H3A 1Y2

411-394C ADMINISTRATION OF EDUCATION IN QUEBEC. (3 credits.) An introduction to the system of administration and decision-making in the public schools of the province as these relate to teachers. Consideration will be given to staff relationships, the politics of education, finance and administrative roles at all levels of the system.
July 5 — July 23
10:30 — 12:30 daily
Professor Townsend

This course is intended for:
1) Extra Provincial Teachers.
2) Anyone Registered in a McGill Teacher Certification Program (Part-Time).

DIPLOMA PROGRAM IN READING INSTRUCTION

Program Director: Professor F. Greene

The Quebec Department of Education grants a Diploma in the teaching of Reading to candidates who have successfully completed the requirements of the program and have teachers' certificates valid in the Province of Quebec. The diploma program is not intended to train clinicians, but rather to aid practising teachers in more effective developmental and corrective teaching of reading.

The program consists of ten 3-credit courses. Full information about the program may be obtained from the Reading Centre, (392-8888).

427-223C READING INSTRUCTION — EARLY CHILDHOOD. (3 credits.) Methods and materials for the teaching of reading in the primary grades.
July 27 — August 13
8:00 — 10:00 daily — Section 01
July 27 — August 13
10:30 — 12:30 daily — Section 02
Staff

427-233C READING INSTRUCTION — LATER CHILDHOOD. (3 credits.) Methods and materials for the teaching of reading in the intermediate grades.
July 5 — July 23
8:00 — 10:00 daily — Section 01
July 5 — July 23
10:30 — 12:30 daily — Section 02
July 5 — July 23
8:00 — 10:00 daily — Section 03
Staff

427-523C READING INSTRUCTION — HIGH SCHOOL. (3 credits.) Methods and materials for the teaching of reading in the High School.
July 27 — August 13
8:00 — 10:00 daily
Staff

427-533C INTEGRATED LANGUAGE ARTS. (3 credits.) Methods and materials for integrating reading/writing/speaking aspects of communication instruction.
July 5 — July 23
8:00 — 10:00 daily — Section 01
July 5 — July 23
10:30 — 12:30 daily — Section 02
July 5 — July 23
8:00 — 10:00 daily — Section 03
Staff

427-576C READING IN THE CONTENT FIELDS. (3 credits.) An exploration of reading instruction in secondary programs in the content fields; survey of remedial and developmental reading instruction throughout the elementary and secondary schools, together with review of research in secondary reading.
July 27 — August 13
8:00 — 10:00 daily — Section 01
July 27 — August 13
10:30 — 12:30 daily — Section 02
Staff

427-344C CHILDREN'S LITERATURE. (3 credits.) Selection and use of literature for the differing abilities and interests of elementary school students.
July 5 — August 12
13:30 — 15:30 every second day
Staff

N.B.: No more than one three week course may be taken at the same time as this one. (The other

literature course may be elected in addition.) i.e., a maximum of 6 credits may be taken during each of the two three-week sessions.

427-345C LITERATURE FOR YOUNG ADULTS. (3 credits.) Selection and use of literature for the differing abilities and interests of High School students.
July 6 — August 13
13:30 — 15:30 every second day
Staff

N.B.: No more than one three week course may be taken at the same time as this one. (The other literature course may be elected in addition.) I.e., a maximum of 6 credits may be taken during each of the two three-week sessions.

IMPORTANT: The corrective practicums are limited to candidates who have already completed two reading instruction courses. The two practicums required of the diploma program are done over one summer making a six week session. Because these are practicums rather than courses, they meet for more than the usual number of contact hours and no other courses can be taken during the practicum summer.

For details about sections and locations of the following three Corrective Reading Practicums, please contact the Reading Centre, (392-8888).

IMPORTANT: Students wishing to attend these practicums must obtain permission to register, from the Reading Centre, before May 1, 1976.

427-224C CORRECTIVE READING INSTRUCTION — EARLY CHILDHOOD. (3 credits; Prerequisite: 427-223.) Reading problems at the readiness and basic decoding level presented in a practicum format covering classroom diagnosis and remediation.
July 27 — August 13
9:00 — 13:30 daily
Staff

427-234C CORRECTIVE READING INSTRUCTION — LATER CHILDHOOD. (3 credits; Prerequisite: 427-233.) Reading problems beyond the readiness and basic decoding level presented in a practicum format covering classroom diagnosis and remediation.
July 5 — July 23
9:00 — 13:30 daily
Staff

427-577C CORRECTIVE READING INSTRUCTION — HIGH SCHOOL. (3 credits; Prerequisite: 427-523.) Reading problems found in remedial reading classes at the high school level presented in a practicum format covering diagnosis and remediation appropriate for remedial classrooms.
July 27 — August 13
9:00 — 13:30 daily
Staff

DIPLOMA PROGRAM FOR KINDERGARTEN SPECIALISTS (Summer 1976)

Program Director: Professor R. Duncan

The Quebec Department of Education grants a Kindergarten Specialist Diploma to any candidate who has successfully completed the program and who has a teacher's certificate valid in the Province of Quebec. The program consists of the courses listed below, and additional courses equivalent to 6 credits. These additional courses should be selected in consultation with the program director.

414-214C CHILD DEVELOPMENT. (6 credits.) The social, emotional, psychological and intellectual growth and development of the young child; guided observation of children; seminars; reports; individual readings.
July 5 — August 13
10:30 — 12:30 daily
T.B.A.

427-328C CREATIVE MOVEMENT AND DRAMATICS. (3 credits.) Experience in creative drama and the dynamics of space; body movement improvisation, creative problem solving, control and release of emotional energy.
July 5 — July 23
8:00 — 10:00 daily
Text: Way, Brian, *Development through Drama,* Longmans; *OR* Siks, Geraldine, *Creative Dramatics,* Harper Bros., 1958.
Limited Registration
Mrs. E. Russell

429-212C MUSIC FOR KINDERGARTEN TEACHERS. (3 credits; Recommended: Basic Musicianship (429-201) but not required.) Contemporary methods in music education at the nursery school and kindergarten level; development of musical skills through groups and individual practice sessions.
July 5 — August 13
13:30 — 14:30 daily
Text: Jaye, Mary Tinnin et al, *Making Music Your Own,* Silver Burdett Company, 1971, (Kindergarten teacher's edition).
Limited Registration
Professor Thibeault

414-314C DEVELOPMENT TESTING OF YOUNG CHILDREN. (Not offered in 1976.) (3 credits.) Guided observation of children with emphasis on developmental testing. Lectures, demonstrations and testing practicum.

426-212C ART FOR KINDERGARTEN TEACHERS. (Offered through the Department of Education in Art.) (3 credits.) Exploration of a variety of art media suitable for the kindergarten child; relationships of line, colour and texture; development of manipulative skills and the child's perceptual awareness of his environment.

427-327C CREATIVE DRAMATICS AND CHILDREN'S LITERATURE. (Not offered in 1976.) (3 credits; Prerequisite: 427-328 or permission of Instructor.) Experience in characterization, story making, story dramatization; an exploration of the elements of drama and dramatic literature.

433-312C METHODS AND MATERIALS FOR THE KINDERGARTEN. (Not offered in 1976.) (3 credits.) Analysis of the Kindergarten environment with emphasis on equipment and materials, and suggestions for their use.

DIPLOMA IN SPECIAL EDUCATION FOR TEACHERS OF CHILDREN WITH LEARNING DIFFICULTIES.

Program Director: Professor W.A. Wilkinson
Summer Director: Professor Nora McCardell

The Faculty of Education and the Provincial Department of Education have established a three-summer program leading to a diploma in Special Education for teachers of children with learning and behaviour problems. This includes the so-called learning disability, mentally retarded and emotionally disturbed children.

Application for admission to this special program must be accompanied by references from school principals or other officials to certify that the applicant possesses the qualifications necessary for this type of teaching. Students not intending to work for the Diploma may take any courses for which they have an appropriate background of training and experience. Such students should apply to the Department of Educational Psychology for permission to enter these courses (392-8809, Room 504, 3700 McTavish St.). Classes begin on July 5.

Candidates for the Diploma must take courses 340, 341, 342, 343, 344, 440, 441, 442, and any two of the remaining courses.

For Diploma candidates, 340C, 341C, 342C and 343C should be taken in the first summer.

In applying for any of these courses, students should indicate whether they are interested in sections directed toward children below age 12 or above age 12. As far as possible, sections will be organized on this basis.

N.B. Normal prerequisite for all courses: Teacher Certification.

Note:

(1) Dr. Houghton will teach courses 444 and 440, Sections 1. They will probably be given off campus as it is hoped that children will be available for supervised practice. Students should register for both 444 and 440, Sections 1. Students wanting only 440 should register for Section 2. (Please be sure that the correct sections are indicated on your Authorization Form.)

(2) Course 414-495, Section 2 — Psychology of Mathematics — will be concerned with remedial problems in basic mathematics. This course will be accepted as an option in the Diploma in Special Education. (Please be sure that the correct section is indicated on your Authorization Form.)

414-340C EDUCATION OF EXCEPTIONAL CHILDREN. (3 credits.) Introduction to the education of exceptional children; characteristics, classification, needs of exceptional children; developmental and corrective programs; areas of current research.
July 5 — July 23
8:00 — 10:00 daily

414-341C GENERAL METHODS IN SPECIAL EDUCATION. (3 credits.) Class organization, teaching methods, assessments of educational level, setting objectives, grouping, individual programming, and reporting.
July 27 — August 13
8:00 — 10:00 daily

414-342C ORGANIZATION OF SPECIAL EDUCATION PROGRAMS. (3 credits.) Needs of EMR, slow-learning and emotionally disturbed children; characteristics, school programs, evaluation of progress, integration into the community.
July 27 — August 13
10:30 — 12:30 daily

414-343C INTRODUCTION TO DIAGNOSIS AND ASSESSMENT. (3 credits.) Principles and procedures in the evaluation of pupil growth and achievement. Emphasis on the use and interpretation of tests to be given by the class teacher.
July 5 — July 23
10:30 — 12:30 daily

414-344C PRACTICUM IN DIAGNOSIS AND ASSESSMENT OF LEARNING PROBLEMS. (3 credits.) A supervised practicum in the use of various tests and measures in learning problems of children; developing prescriptive teaching programs.
July 5 — July 23
8:00 — 10:00 daily

414-440C COGNITIVE AND PSYCHOMOTOR PROBLEMS OF EXCEPTIONAL CHILDREN. (3 credits; Prerequisites: 414-341, 342.) Teaching methods appropriate to individual and small group instruction to overcome a variety of learning problems. Emphasis on perceptual difficulties. Concurrent with 414-442.
July 27 — August 13
8:00 — 10:00 daily

414-441C BEHAVIOURAL PROBLEMS OF EXCEPTIONAL CHILDREN. (3 credits.) Teaching methods appropriate to the needs of pupils with

emotional and behaviour problems. Methods presented will include modification techniques.
July 27 — August 13
10:30 — 12:30 daily

414-442C PSYCHOLOGY OF LEARNING PROBLEMS. (3 credits.) The Learning Process: personality development; perceptual dysfunction, behaviour disorders and other handicapping conditions related to learning.
July 5 — July 23
10:30 — 12:30 daily

414-443C SCHOOL-HOME-COMMUNITY RELATIONS IN SPECIAL EDUCATION. (3 credits.) Influence of home and community on the child, teacher-parent interviews, reporting, co-operation with hospital clinics, other professionals, etc.
July 27 — August 13
8:00 — 10:00 daily

414-444C MATERIALS IN SPECIAL EDUCATION. (3 credits.) A critical examination of materials available for special education programs, commercial and teacher-made materials; the application of A-V techniques to Special Education.
July 5 — July 23
10:30 — 12:30 daily

414-445C VOCATIONAL HABILITATION OF EXCEPTIONAL CHILDREN. (3 credits.) Vocation requirements of non-academic children, vocational preparation as a responsibility of the special class teacher, placement services, follow-up.
July 27 — August 13
10:30 — 12:30 daily

414-446C SPECIAL TOPICS IN THE EDUCATION OF EXCEPTIONAL CHILDREN. (3 credits.)

Section 01: Various Concepts of Schizophrenia and Educational Intervention.
July 5 — July 23
8:00 — 10:00 daily

Section 02: Normalization and Behaviour Management for the Mentally Retarded.
July 5 — July 23
8:00 — 10:00 daily

Section 03: Talented and Gifted Children: Psychology and education for exceptionally able children. Definitions, assessment, types of programs and goals, and teacher requirements. Combines theoretical background and practical concerns. Includes regular reading, seminars, visits by children and parents. Evaluation comprises summaries of readings, book review, project, and test on the texts. Options available in requirements and evaluations.
July 5 — July 23
10:30 — 12:30 daily

Section 04: Early Interventions in the Education of Exceptional Children.
July 27 — August 13
8:00 — 10:00 daily

Section 05: Disadvantaged Children: This course provides an examination of the cognitive, social and emotional problems of the disadvantaged child and examines various educational techniques for facilitating academic success.
July 5 — July 23
10:30 — 12:30 daily

N.B. Students may register for only ONE topic. Please state title of topic on your registration form.

DEPARTMENT OF EDUCATION IN ART

Chairman: Professor E. Jaques

426-204C DRAWING. (3 credits.) Development of draughtsmanship; exploration of various forms of graphic expression.
July 5 — July 23
9:00 — 12:00 daily
Limited Registration
Professor Watling

* **426-205L PAINTING II.** (3 credits; Prerequisite: Drawing 426-204.) A painting workshop; students work at their own level.
May 10 — May 28
9:00 — 12:00 daily
** Limited Registration
Professor Watling

* **426-304L PAINTING III.** (3 credits.) A continuation of prerequisite 205.
May 10 — May 28
9:00 — 12:00 daily
** Limited Registration
Professor Watling

* **426-305L Painting IV.** (3 credits.) A continuation of prerequisite 304.
May 10 — May 28
9:00 — 12:00 daily
** Limited Registration
Professor Watling

* **426-404L PAINTING V.** (3 credits.) A continuation of prerequisite 305.
May 10 — May 28
9:00 — 12:00 daily
** Limited Registration
Professor Watling

* **426-405L PAINTING VI.** (3 credits.) A continuation of prerequisite 404.
May 10 — May 28
9:00 — 12:00 daily
** Limited Registration
Professor Watling

*Prerequisite for the above courses: Permission of Instructor.

**Registration in the combined Painting courses is limited to 20 students.

* **426-206L INTRODUCTION TO GRAPHICS.** (3 credits.) An introduction to some graphic techniques; a practical study in the various elementary processes, e.g. lino cuts, wood cuts, monoprints, etc. Workshop.
May 10 — May 28
9:00 — 12:00 daily
Professor B. White

* **426-206C INTRODUCTION TO GRAPHICS.** (3 credits.) An introduction to some graphic techniques; a practical study in the various elementary processes, e.g. lino cuts, wood cuts, monoprints, etc. Workshop.
July 5 — July 23
9:00 — 12:00 daily — Section 01
July 27 — August 13
9:00 — 12:00 daily — Section 02
Professor B. White

* **426-207L GRAPHICS II.** (3 credits; Prerequisite: Introduction to Graphics or permission of the Instructor.) Study in further graphic techniques. These may include line engraving, dry point, relief etching, intaglio and related processes. Workshop.
May 10 — May 28
9:00 — 12:00 daily
Professor B. White

* **426-207C GRAPHICS II.** (3 credits; Prerequisite: Introduction to Graphics or permission of the Instructor.) Study in further graphic techniques. These may include line engraving, dry point, relief etching, intaglio and related processes. Workshop.
July 5 — July 23
9:00 — 12:00 daily — Section 01
July 27 — August 13
9:00 — 12:00 daily — Section 02
Professor B. White

* **426-394L GRAPHICS III.** (3 credits; Prerequisite: Graphics II or permission of the Instructor.) Continuation of studies of graphic techniques. These may include variations of previously learned techniques, silk screen, viscosity printing, multiple plate work, etc. Workshop.
May 10 — May 28
9:00 — 12:00 daily
Professor B. White

* **426-394C GRAPHICS III.** (3 credits; Prerequisite: Graphics II or permission of the Instructor.) Continuation of studies of graphic techniques. These may include variations of previously learned techniques, silk screen, viscosity printing, multiple plate work, etc. Workshop.
July 5 — July 23
9:00 — 12:00 daily — Section 01
July 27 — August 13
9:00 — 12.00 daily — Section 02
Professor B. White

* **426-395L GRAPHICS IV.** (3 credits; Prerequisite: Graphics III or permission of the Instructor.) Advanced studies in various graphic media. The student will be expected to be familiar with standard processes to enable him/her to begin to develop a personal style. Workshop.
May 10 — May 28
9:00 — 12:00 daily
Professor B. White

* **426-395C GRAPHICS IV.** (3 credits; Prerequisite: Graphics III or permission of the Instructor.) Advanced studies in various graphic media. The student will be expected to be familiar with standard processes to enable him/her to begin to develop a personal style. Workshop.
July 5 — July 23
9:00 — 12:00 daily — Section 01
July 27 — August 13
9:00 — 12:00 daily — Section 02
Professor B. White

* **426-494L GRAPHICS V.** (3 credits; Prerequisite: Graphics IV or permission of the Instructor.) An extension of skills learned in Graphics I — IV. Techniques explored may include engraving, silk screen, relief etching, intaglio, collagraphy, dry point, combinations of printing techniques. The student will be expected to explore those areas which most closely correspond to his particular graphic style.
May 10 — May 28
9:00 — 12:00 daily
Professor B. White

* **426-494C GRAPHICS V.** (3 credits; Prerequisite: Graphics IV or permission of the Instructor.) An extension of skills learned in Graphics I — IV. Techniques explored may include engraving, silk screen, relief etching, intaglio, collagraphy, dry point, combinations of printing techniques. The student will be expected to explore those areas which most closely correspond to his particular graphic style.
July 5 — July 23
9:00 — 12:00 daily — Section 01
July 27 — August 13
9:00 — 12:00 daily — Section 02
Professor B. White

* **426-495L ADVANCED GRAPHICS VI.** (3 credits; Prerequisite: Graphics V or permission of the Instructor.) A further extension of skills learned in Graphics V. The student is expected to have mastered basic graphic skills and be able to work independently. A competent development of personal style, experimentation with, and control over the chosen medium is expected.
May 10 — May 28
9:00 — 12:00 daily
Professor B. White

* **426-495C ADVANCED GRAPHICS VI.** (3 credits; Prerequisite: Graphics V or permission of the Instructor.) A further extension of skills learned in

Graphics V. The student is expected to have mastered basic graphic skills and be able to work independently. A competent development of personal style, experimentation with, and control over the chosen medium is expected.
July 5 — July 23
9:00 — 12:00 daily — Section 01
July 27 — August 13
9:00 — 12:00 daily — Section 02
Professor B. White

* Registration in the combined Graphics courses in each "term" is limited to 12 students. Please indicate section preference on either your Authorization Form, your Waiver, or your letter of permission from your home institution.

426-209L CERAMICS II. (3 credits; Prerequisites: 426-208A or B; 6B4-303; or permission of Instructor.) Exploration of Primitive and Raku processes.
May 10 — May 28
9:00 — 12:00 daily
Limited Registration
Professor Studham

426-209C CERAMICS II. (3 credits; Prerequisites: 426-208A or B; 6B4-303; or permission of Instructor.) Exploration of Primitive and Raku processes.
July 27 — August 13
9:00 — 12:00 daily
Limited Registration
Professor Studham

426-212C ART FOR KINDERGARTEN TEACHERS. (3 credits; Prerequisite: Basic Art Media or equivalent.) Exploration of a variety of media suitable for young children; development of manipulative skills and the child's perceptual awareness of his environment.
July 27 — August 13
8:00 — 10:00 daily
Limited Registration
Mrs. Foixet-Studham

426-241L BASIC ART MEDIA. (3 credits.) A course to acquaint the student with basic art media in two and three dimensions. To provide in-depth experience in the creative process.
May 10 — May 28
9:00 — 12:00 daily
Limited Registration
Ms Tondino

426-296L BASIC DESIGN. (3 credits.) Exploration of the basic elements of visual art, two and three dimensional composition and constructions. Investigation of materials and the process of manipulating and relating materials.
June 1 — June 18
9:00 — 12:00 daily
Limited Registration
Professor Papke

426-322C ART CURRICULUM AND INSTRUCTION — EARLY CHILDHOOD. (3 credits; Prerequisite: Basic Art Media or Basic Design.) A workshop in teaching techniques to develop the child's visual awareness and creativity.
July 5 — July 23
9:00 — 12:00 daily
Professor Benjamin

426-398L EARLY CANADIAN ART HISTORY. (3 credits.) The visual environment and expression in early Canada until Confederation of 1867 as revealed in native and European forms of architecture. Fine and applied arts. Study through lectures, field trips, visual and written assignments.
May 10 — May 28
8:00 — 10:00 daily
Limited Registration
Professor Papke

DEPARTMENT OF CATHOLIC STUDIES

Chairman: Professor T. Francoeur

415-200C GOD AND MAN IN DIALOGUE. (3 credits.) An exploration of "Revelation", especially as conceived by the Second Vatican Council with particular concern for Man's responsibility within the revelational process today.
July 27 — August 13
8:00 — 10:00 daily
Reverend Jeffery

415-204C MAN BEFORE REALITY. (3 credits.) An exploration of the real in its being and its becoming, in its principles and its causes, in its unity and its diversity, in its truth and its goodness.
July 5 — July 23
8:00 — 10:00 daily
Professor Pinto

415-209C THE SEARCH FOR AUTHENTICITY. (3 credits.) This course will explore contemporary man's search for himself and his God as reflected in selected writings around the theme of death and dying.
July 5 — July 23
10:30 — 12:30 daily
Limited Registration
Professor Lawlor

415-491C CATECHETICAL THEMES. (3 credits.) Following upon exploration of the basics of guiding the Religious Response, the student is afforded the opportunity of enriching his background by exploring great catechetical themes in the light of the newest theological insights. ELEMENTARY AND SECONDARY.
July 27 — August 13
10:30 — 12:30 daily
Professor Scott

DEPARTMENT OF EDUCATIONAL ADMINISTRATION

Chairman: Dr. R.H. Tali

Diploma in Educational Administration

The Department of Educational Administration offers a Diploma program for those seeking more highly specialized training in leadership than provided in Bachelor's programs but who do not wish to pursue a Master's degree. The Diploma is awarded upon the successful completion of 30 credits of systematic study within the Department. Courses focus on such functions as curriculum, finance, personnel, and work with groups.

The program is limited to those who have at least two years of work experience in an administrative capacity, e.g., department chairmen, principals, directors of adult education. Induction into the program occurs only in the summer.

Application forms and further information may be obtained from the Diploma Program Director, Department of Educational Administration, 392-8834.

411-511G GENERAL ADMINISTRATIVE PRACTICE. (6 credits.) An overview of the administrative practice and procedure in use in education today. Relevant theory to practice relationship will be explored.
Dates: T.B.A.
Times: T.B.A.
T.B.A.

411-530C ADMINISTRATION OF EDUCATION IN QUEBEC. (3 credits.) A consideration of the system of education in Quebec. The focus will be on the basic legal framework of education in Quebec and the principal legal documents, and on the educational system in interaction with other social systems and society as a whole.
Dates: T.B.A.
Times: T.B.A.
T.B.A.

DEPARTMENT OF EDUCATION IN ENGLISH

Chairman: Professor M. O'Hara

427-305C EXPERIENCES IN COMMUNICATION I. (3 credits; Recommended: Introduction to Educational Media would be helpful.) Personal development of students as communicators, involvement of the imagination in individual and group projects in language and in other chosen media of communication; analysis of experiences in projects in relation to general problems of communication.
July 5 — July 23
10:30 — 12:30 daily
Limited Registration
Professor Emery

427-594C CREATIVE DRAMATICS IN THE CLASSROOM. (3 credits.) A participatory course in creative drama and the use of improvisational techniques in the pursuit of child development.
July 5 — July 23
10:30 — 12:30 daily
Pre-Sessional Readings: Way, Brian, *Development Through Drama,* Longmans; Slade, Peter, *An Introduction to Child Drama,* University of London Press.
Text: Hodgson and Richards, *Improvisation,* Methuen, University Paperback, 1966.
Limited Registration
Professor Webb-Hearsey

427-595C IMPROVISATION AND THEATRE ARTS FOR THE CLASSROOM. (3 credits; Prerequisite: 427-594 or equivalent — i.e. some basic drama work, preferably developmental.) A course beyond the introductory level of developmental drama, to provide further perspectives on improvisation and the teaching of drama.
July 5 — July 23
13:30 — 15:30 daily
Pre-Sessional Readings: Hodgson and Richards, *Improvisation,* Methuen, University Paperback, 1966.
Text: Spolin, Viola, *Improvisation for the Theater,* Northwestern University Press, 1963.
Limited Registration
Professor Webb-Hearsey

DEPARTMENT OF EDUCATION IN MATHEMATICS AND SCIENCE

Chairman: Professor W.E. Searles

417-241C BACKGROUND SCIENCE FOR ELEMENTARY SCHOOL TEACHERS. (3 credits.) This course presents science as a means of exploring and explaining our environment. A study of some of the fundamental concepts common to most elementary programs.
July 5 — July 23
8:00 — 10:00 daily
Limited Registration
Professors Searles and Wolfe

428-241C BACKGROUND MATHEMATICS FOR ELEMENTARY SCHOOL TEACHERS. (3 credits.) A course specially designed for elementary school teachers to provide the basic foundations, insight and understanding of the Quebec Modern Elementary Mathematics program.
July 5 — July 23
8:00 — 10:00 daily
Text: Polis and Beard, *Fundamental Mathematics for Elementary Teachers,* Harper & Row.
Professor Modafferi

428-243C BACKGROUND GEOMETRY FOR ELEMENTARY SCHOOL TEACHERS. (3 credits.) AWAITING APPROVAL. A course specially designed for elementary school teachers to provide

the basic foundations, insight and understanding of the geometry found in the Quebec Modern Elementary Mathematics program.
July 27 — August 13
8:00 — 10:00 daily
Text: Nowlan and Washburn, *Geometry for Teachers,* Harper & Row.
Professor Modafferi

EDUCATIONAL MEDIA CENTRE

Program Director: Professor R. Jones

The Educational Media Diploma Program consists of a sequence of ten credit courses.

The courses are offered by the Faculty of Education, 3700 McTavish St. Courses are offered each summer and also over the winter as evening classes. Upon completion of the program a Province of Quebec diploma is awarded.

The diploma program is intended to train practising teachers in more effective classroom communication and to prepare school or district media specialists and library-resource centre staff.

For more information contact the Director of the Educational Media Centre at 392-8876.

432-204C EDUCATIONAL MEDIA I. (3 credits.) Application of Educational media to the elementary and secondary school teaching and learning situation; rationale and underlying principles, the sources, selection, production, effective utilization and evaluation of the media.
July 5 — July 23
8:00 — 10:00 daily — Section 01
10:30 — 12:30 daily — Section 02
Limited Registration
Professor Ascroft

432-205C FILM PRODUCTION AND FILM CRITICISM. (3 credits.) Educational significance of various projected media, 16mm films, 8mm films, 35mm slides, multi-media presentations, the utilization of such media, teacher or student production.
July 5 — July 23
10:30 — 12:30 daily
Limited Registration
T.B.A.

432-303C PHOTOGRAPHY. (3 credits.) This course includes the basic technical and aesthetic components of black and white and color 35mm photography. The course will consist of lectures, seminars and extensive fieldwork and darkroom sessions.
July 5 — July 23
8:00 — 10:00 daily
Limited Registration
T.B.A.

432-304C EDUCATIONAL MEDIA II. (3 credits; Prerequisite: 432-204 or permission of Instructor.) This course is intended for the individual with some experience in educational media. Topics include communication theory, implications of learning theory for the media specialist, advanced production techniques and the administration of the media centre.
July 27 — August 13
10:30 — 12:30 daily
Limited Registration
T.B.A.

432-306C EDUCATIONAL TELEVISION. (3 credits.) This course will survey the development of ETV with particular reference to current topics including children's TV programs, cable and closed circuit ETV. Short TV productions will take place in class to encourage a critical analysis of the potential of portable TV equipment for local teacher and student production.
July 27 — August 13
8:00 — 10:00 daily
Limited Registration
T.B.A.

432-405C INDEPENDENT PROJECT. (6 credits; Prerequisites: At least three production courses or extensive experience and acceptable project proposal.) An extensive media production undertaken by the student after consultation with and the approval of the director of the library-media program.
July 5 — August 13
Professor Jones

DEPARTMENT OF EDUCATION IN MUSIC

Chairman: Professor L.E. McDonald

429-201C BASIC MUSICIANSHIP. (3 credits.) A course especially designed for elementary school teachers to provide the basic foundations, insight and understanding of elements of music theory through techniques of aural training, sight singing, keyboard and written applications.
July 5 — August 13
10:30 — 11:30 daily
Text: Nye, Robert and Bergethon, Bjornar, *Basic Music,* Prentice-Hall Inc., 1973.
Limited Registration
Professor Thibeault

429-332C MUSIC CURRICULUM AND INSTRUCTION — LATER CHILDHOOD. (3 credits; Recommended: Basic Musicianship suggested but not required.) Materials, methods, planning and organization of musical experiences for later childhood classes through class participation in listening, singing, playing instruments, creating, reading music and listening activities.
July 5 — August 13
11:30 — 12:30 daily
Text: Gelineau, R. Phylis, *Songs in Action,* McGraw-Hill Co., 1974.
Limited Registration
Professor Thibeault

DEPARTMENT OF PHYSICAL EDUCATION

Chairman: Dr. R.E. Wilkinson

434-291L COMMUNITY RECREATION. (3 credits.) The main focus of the course centres on the relationship of the school to youth recreation agencies. Guidelines for planning effective recreation programs, techniques for the coordination of youth recreation services and basic recreation leadership principles are studied.
May 10 — May 28
10:30 — 12:30 daily
Limited Registration
Professor Wall

434-493L ADMINISTRATION OF PHYSICAL EDUCATION. (3 credits; Prerequisite: Consent of Instructor.) Organization and administration of programs in Physical Education; emphasis on common problems encountered by physical educators in the instructional, intramural and interscholastic areas.
May 10 — May 28
8:00 — 10:00 daily
Professor Wilkinson

434-495L SCIENTIFIC PRINCIPLES OF ATHLETIC TRAINING. (3 credits; Prerequisites: Physiology 201 and Ergo-Physiology 391.) Application of physiological and kinesiological principles in the selection, administration and evaluation of conditioning programs. Specific topics studied include the components of athletic and physical fitness, weight training, exercise as preventive medicine, weight control, ergogenic aids, and sex differences.
May 10 — May 28
10:30 — 12:30 daily
Text: Hockey, R.V., *Physical Fitness,* C.V. Mosby Company, 1973.
Professor Montgomery

434-497L HISTORICAL AND COMPARATIVE ASPECTS OF PHYSICAL EDUCATION AND SPORT. (3 credits.) An historical study of the origins and development of physical education and sport, and a comparative study of physical education and sport practices of many nations.
May 10 — May 28
10:30 — 12:30 daily
Professor Riley

DEPARTMENT OF EDUCATIONAL PSYCHOLOGY AND SOCIOLOGY

Chairman: Professor H. Stutt

414-205C SOCIOLOGY OF EDUCATION — AN OVERVIEW. (3 credits.) An introductory course, designed to present students with a broad sociological perspective from which to view education and to provide background for subsequent courses in the sociology of education. Topics will include the role of education as an institution in society, the school as a social system, the role of educational personnel and the influence of social variables such as race, sex, ethnicity, and socio-economic status on teaching and learning.
July 5 — July 23
10:30 — 12:30 daily
T.B.A.

414-249C CREATIVITY AND ITS CULTIVATION. (3 credits.) Survey of recent research and theory concerning creativity, with special attention to creativity in school-age children; treats problems of defining and assessing creativity, the relationship between creativity and intelligence, the nature of the creative process and personality and creative behaviour. Methods of enhancing creativity will be examined, emphasizing ways of facilitating creativity in a school setting.
July 27 — August 13
10:30 — 12:30 daily
T.B.A.

414-308C SOCIOLOGY OF THE CLASSROOM. (3 credits.) The classroom as a social system; school or class climate as it influences the learner. The socialization process; social class, racial and ethnic variations in socialization styles. Influences on learning of teacher on child's self-concept and subsequent results in terms of achievement, level of aspiration, and social mobility.
July 27 — August 13
10:30 — 12:30 daily
T.B.A.

414-377C ADOLESCENCE AND THE PROCESS OF EDUCATION. (3 credits.) Development of personality and social behaviour in adolescence. Problems relating to self-concept, academic achievement, relationships with others, and development of values in a changing culture. Some attention to current criticisms of the school as an agency involved in adolescent development.
July 5 — July 23
8:00 — 10:00 daily
T.B.A.

414-495C SEMINAR IN SPECIAL TOPICS IN EDUCATIONAL PSYCHOLOGY. (3 credits.)

Section 01: The Computer in Education. The course will be non-mathematical in nature and will deal with such topics as recent developments in computer-assisted instruction, computer-assisted testing, and computer-managed instruction. It is expected that this course will be of interest to those enrolled in the B.Ed. program or diploma in media program.
July 5 — July 23
10:30 — 12:30 daily
T.B.A.

Section 02: How Children Learn Mathematical Problem Solving. This seminar will, for the most part, be concerned with (1) a survey of some relevant cognitive psychology, (2) a consideration of

some applications of the theories of Jean Piaget, and (3) a discussion of some specific issues in remedial mathematics and the diagnosis of learning deficiencies.
July 27 — August 13
10:30 — 12:30 daily
T.B.A.

N.B. Students may register for only ONE section of this course. Please specify section number on the Faculty Authorization Form.

For information on additional Educational Psychology courses please consult the Diploma in Special Education section of this Announcement.

DEPARTMENT OF EDUCATION IN SECOND LANGUAGES

Chairman and Program Director: Professor M. Buteau

431-311C LINGUISTICS APPLIED TO TEACHING ENGLISH AS A SECOND LANGUAGE (3 credits; Prerequisite: Permission of the Department.) Introduction to general linguistics; the nature and function of language; the relations of current linguistic theories to the selection, progression, presentation and fixation of English program content; examination and preparation of teaching, remedial and testing materials related to English as a Second Language.
July 5 — July 23
8:00 — 10:00 daily
Professor Berthault

431-340C ANIMATION TECHNIQUES FOR SECOND LANGUAGE TEACHING. (3 credits; Prerequisite: Permission of the Department.) Exploration, demonstration of animating procedures and techniques for enlivening second-language learning and for integrating it into the child's general development. Workshops conducted in cooperation with other departments; music, media, art, etc. Practical sessions in communication experience.
Dates: T.B.A.
Times: T.B.A.
Professor J. White

431-345C THE BILINGUAL CLASS I. (3 credits; Prerequisites: A basic course in the teaching of French as a Second Language and/or applied Linguistics.) A study of Bilingual Education Programs with particular focus on approaches and techniques for teaching second languages via regular program content and especially for developing reading skills.
July 5 — July 23
13:30 — 15:30 daily
Ms. Plante

431-347C TEACHING ENGLISH AS A SECOND LANGUAGE — ELEMENTARY SCHOOL. (3 credits; Prerequisite: Permission of the Department.) Objectives and Curriculum; study of modern English in a second language perspective; teaching techniques and materials; tutoring in ESL situations.
July 27 — August 13
8:00 — 10:00 daily
Professor Berthault

CERTIFICATE IN SECOND LANGUAGE TEACHING

Candidates who are interested in beginning or pursuing courses leading to this Certificate should contact the Department of Education in Second Languages (392-8863) as soon as possible. Courses will be set up if they are requested by a sufficient number of applicants. They will be offered from July 5 to August 13. A special list of these courses will be available at the Department in early June.

DEPARTMENT OF SOCIAL FOUNDATIONS OF EDUCATION

Chairman: Dr. J.K. Jobling

413-406C INTRODUCTION TO COMPARATIVE EDUCATION. (3 credits.) Study of the dynamics of education in various societies throughout the world. The ideas and approaches of several disciplines are utilized in order to gain an understanding of educational systems and problems in comparative perspective.
July 5 — July 23
10:30 — 12:30 daily
Professor Eisemon

413-407C EDUCATION AND SOCIETY IN QUEBEC. (3 credits.) A study of the relationship between education and society in Québec from the 17th century to the present. Such topics as cultural dualism and education, church and education, modernization, are examined.
July 27 — August 13
10:30 — 12:30 daily
Texts: Johnson, F. Henry, *A Brief History of Canadian Education,* McGraw Hill, 1968; Magnuson, Roger, *Education in the Province of Québec,* McGraw Hill, 1974.
Professor Laferrière

DEPARTMENT OF EDUCATION IN SOCIAL STUDIES

Chairman: Professor M. Bain

430-332C LOCAL AND COMMUNITY STUDIES — LATER CHILDHOOD. (3 credits.) The place and purpose of community studies in the Quebec elementary social science curriculum. Practical experiences in designing teaching strategies which use the social and economic environment as media for learning.
July 5 — July 23
8:00 — 10:00 daily
Professors Brown and Bradley

TEACHERS' CERTIFICATION PROGRAM IN VOCATIONAL EDUCATION

Program Director: Professor F. Jack Young
July 5 — August 6

Candidates admitted to the Certification Program in Vocational Education prior to the summer of 1973 will complete the requirements for certification under the conditions for entry established for this program in 1969.

Candidates admitted to the Certification Program in Vocational Education in the summer of 1973 and thereafter will come under the conditions established by the Ministry of Education in PLAN DIRECTEUR.

Admission Requirements (Candidates enrolled prior to Summer 1973.)

To continue in this program candidates must:

1. Have successfully completed all phases of the program taken in previous summers.
2. Have evidence of successful teaching during the past school year.
3. Hold a valid Provincial Teaching Authorization.
4. Be under contract to teach Technical or Business subjects full-time at the secondary level for the next school year.

Course Requirements (Candidates enrolled prior to Summer 1973.)

Having satisfied the prerequisites, the equivalent of 400 hours of course work are needed to meet the requirements for certification.

The maximum course load for one summer is 125 hours, or equivalent, and is normally supplemented by a research project — Course 436-264C — during the Fall/Winter Semester between the second and third summers.

After successful completion of three full summers on this Technical-Vocational Business Education program, candidates are entitled to credit for one full year of scolarité.

Admission Requirements (Candidates enrolled Summer 1973 onward) — PLAN DIRECTEUR

Note: No candidate will be admitted to this program until his/her credentials have been evaluated and an acceptance of admission has been given by the University.

To be admitted to the Vocational Education (Technical, Business, Home Economics) program (Secondary level) as outlined in PLAN DIRECTEUR, the conditions are:

1. Legal Qualification: Candidates must possess a Legal Authorization to Teach issued by the Ministry of Education.
2. Contract: Candidates must be under contract to teach Vocational Education subjects (Technical, Business, Home Economics) full-time at the secondary level in a public or private institution for the next school year.

To *continue* in the program the conditions are in addition to numbers 1 and 2 above:

a. have successfully completed all phases of the program taken in previous Summer or Winter Sessions.

b. have evidence of successful teaching during the past school year.

Course Requirements (Candidates enrolled in Summer 1973 onward) — PLAN DIRECTEUR

Candidates will follow courses over a period of three summers and two winters to a total of 30 credits.

Candidates currently in the program and those entering for the first time in Summer 1976 will be informed by the Director of the Program of the courses to be taken.

After successful completion of this program as put into operation in July 1973, candidates will receive a Certificate from the University and a Teaching Permit issued by the Ministry of Education. Candidates who successfully complete this 30 credit program are entitled to one full year of scolarité.

Language Requirements

Candidates enrolled in either the old or the new program may be required to prove proficiency in the language of instruction prior to recommendation for certification.

Supplies

Students will be required to pay the actual cost of all materials used in the construction of the special projects and other assignments. Such materials will be made available at the summer school.

Texts

Required texts will be on sale during the first week of summer school.

Location of Summer School

To be announced.

Any inquiries and applications concerning these programs should be directed to: Professor F. Jack Young, Faculty of Education, McGill University, 3700 McTavish Street, Montreal, Quebec H3A 1Y2. (392-8824)

COURSE OFFERINGS

436-264C RESEARCH PROBLEMS IN TECHNICAL-VOCATIONAL EDUCATION. (N.B. — Restricted to students in last year of old program.

Directed study.) To provide individualized instruction and analysis in a specialized area of technical/vocational or business education. The student may select a problem which equates to other courses from the standpoint of scholarship, time requirements and utilitarian value, and develop the problem into a practical document.
As directed, 25 or 50 hours.
Staff

436-266C BASIC INTEGRATED STUDY IN TECHNICAL-VOCATIONAL EDUCATION. (8 credits.) An interdisciplinary approach to the theories and practices of teaching and learning in the area of Technical-Vocational Education.
8:30 — 12:00
12:45 — 16:00
Staff

435-235D SUPERVISED FIELD EXPERIENCE — TECHNICAL-VOCATIONAL — SECONDARY. (4 credits; Not offered in summer 1976.) Supervised field courses arranged with the cooperation of regional schools. Under guidance of an assisting teacher, students work in a shop or laboratory, over an extended period of time, teaching at the level and in the subject areas appropriate to their individual programs. In conjunction with this practical experience the faculty provides conferences and seminars in related methodologies as well as individual counselling and post-practicum evaluation.

436-267C DEVELOPMENT OF VOCATIONAL EDUCATION IN QUEBEC. (2 credits.) A study of the trends in Vocational Education in Quebec with emphasis on the period since 1945. Consideration will be given to the affects of the Federal and Provincial legislation and Ministry regulations as these relate to vocational teachers.
Hours: T.B.A.
Staff

436-268C INSTRUCTIONAL TECHNOLOGY IN VOCATIONAL EDUCATION. (6 credits.) An integrated study of introductory concepts of media strategies, communications theory, and research and development in the teaching of vocational subjects. Emphasis will be placed on individual project development in each participating teacher's area of specialization.
Hours: T.B.A.
Staff

436-269Z INSTRUCTIONAL DESIGN IN VOCATIONAL EDUCATION. (3 credits.) (Not offered in Summer 1976.) An integrated study of introductory concepts in the development and evaluation of instructional design in Vocational Education. Emphasis will be placed on individual project development in each student's teaching speciality.

436-277C ORIENTATION TO INDUSTRY. (2 credits.) This course is a prerequisite for course 436-278C. It provides a perspective of the participant's role as an observer through seminars and field trips, management of human resources, the internal structure and operation of industry, the rate of technological change, and demands upon personnel will be studied.
5 hours per day. July 5 — July 16
9:00 — 12:00 and 13:00 — 15:00
Staff

436-278C INDUSTRIAL FIELD EXPERIENCE. (6 credits.) Participation and/or observation on location in an industry or business. A study of the total operations of a selected industrial or commercial enterprise. Includes an investigation of the inter-relationship of specific parts or sub-divisions to the product produced or the service rendered. A comprehensive technical report submitted upon completion of the work-study.
3 weeks on location in a selected industry
July 19 — August 6
Staff

436-366C INTRODUCTION TO TECHNOLOGY. (6 credits.) To prepare the Technical-Vocational teacher to teach the Secondary II course — Introduction to Technology. The aim of the course is that the student should become aware of the technological world through manipulation, observation and design of technological objects.

N.B.:
1. Sections and hours: T.B.A.
2. Enrolment in any section limited to 20 candidates.
3. Open only to certified vocational teachers.

Staff

436-562C TEACHING METHODS IN BUSINESS EDUCATION. (6 credits.) A course in general teaching principles which will include the teaching and learning process, lesson planning, unit planning, and techniques of instruction specific to business subjects.
Hours: T.B.A.
Staff

436-572C METHODS IN TEACHING TECHNICAL-VOCATIONAL SUBJECTS. (6 credits.) Methods and techniques of instruction in technical education subjects. Classroom management and administration. Lesson planning and use of instructional materials. Individual assignments, demonstrations and reports. Special problems of the teacher.
Hours: T.B.A.
Staff

436-564C ORGANIZATION AND ADMINISTRATION OF BUSINESS EDUCATION. (6 credits.) A course designed to investigate the place of Business Education in the secondary school curriculum and to indicate to the beginning teacher the need for good planning and administration in the classroom routine and to develop an ability to evaluate various aids to the learning process.
Hours: T.B.A.
Staff

436-574C ORGANIZATION AND ADMINISTRATION IN TECHNICAL VOCATIONAL EDUCATION. (6 credits.) This course deals with the principles of effective management, safe planning, architectural considerations, material and tool control, purchasing and maintenance of equipment, student personnel, and teacher responsibilities. The student will plan an instructional area in order to develop an understanding of the principles for producing the necessary two and three dimensional visual materials required for more effective lesson presentation and curriculum development.
Hours: T.B.A.
Staff

436-575 TECHNICAL VOCATIONAL CURRICULUM DEVELOPMENT. (3 credits.) Curriculum organization of vocational education in harmony with the needs of contemporary society; readings, discussion, terminology, aims and objectives, analysis, instructional units, principles of course organization and planning of curricula for specific situations.
Hours: T.B.A.
Staff

436-576C EDUCATION EVALUATION IN VOCATIONAL EDUCATION. (3 credits.) Emphasis on student growth and progress in public education; appraisal of specialized techniques of evaluation, teacher made tests, and data analysis as specifically related to Vocational Education.
Hours: T.B.A.
Staff

NOTE: Regarding Possible Changes and Additions to Vocational Courses

At the time of going to print revisions and expansion of the Plan Directeur program are under active consideration.

Candidates and potential candidates are advised to check for a supplement to the Calendar giving additional and up-to-date details. Inquiries may also be directed to the Program Director Professor F. Jack Young in writing or by telephone 392-8824/8838.

GRADUATE DEGREES IN EDUCATION

Eligibility

During the Summer Session 1976 (July 5 to August 13) graduate courses in Education will be available only to students who have been accepted either to a graduate program in Education or as a Visiting Student for a graduate course in Education.

Visiting Students

Students wishing to take courses at the graduate level in Education, but not to work towards a degree in the McGill Faculty of Education, may be considered if they fall into one of the following categories:

1. A graduate student in another McGill Faculty may take a course or courses for credit towards his degree, provided he submits a letter of permission from his Adviser in his home faculty.
2. A graduate student from another university wishing to take a course or courses at McGill for credit at his own university may do so, provided he submits a letter of permission from the Registrar, or other responsible official of his home university.
3. A student who is not working towards a degree, but who wishes to take a course at McGill may do so providing he meets the entrance requirements for the degree and program in which the course he wishes to take is offered. A maximum of two full courses may be taken.

Application Deadlines

Applicants for programs in Counsellor Education and Educational Administration must submit their application forms and supporting documents before March 1. The submission date for all other programs is April 1.

Application forms and further information may be obtained from:

Professor R. Magnuson
Director of Graduate Studies in Education
McGill Faculty of Education
3700 McTavish Street
Montreal, Quebec H3A 1Y2

Course Registration

Students whose applications have been duly approved and are registered with Graduate Faculty for a degree should complete the GRADUATE Summer Session Course Registration form and return it with a bank draft or money order for the full tuition fee to their Program Director NOT LATER THAN JUNE 15. Payments should be made to the order of McGill University, in Canadian funds.

Personal cheques and postdated cheques will be returned to the students. No provisions have been made for registration in person for graduate students in Education, therefore the Registration dates of May 10 and July 5 listed in the Calendar — 1976 Summer Session are not applicable to graduate students in Education. Registration for graduate courses should be completed by June 15 and any forms or cheques received after this date will be subject to the procedures for Late Registration.

Students registered for a Master of Education degree in a teaching subject must obtain approval for the courses they wish to take from both the Academic Department and from the Faculty of Education Program Director. Formal course registration must be completed with the Faculty of Education by following the steps outlined above.

A maximum of two full courses or their equivalent may be taken during a Summer Session though in some programs the maximum is one.

Fees

Students taking graduate courses in education and students in the Master of Education degrees in teaching subjects do not pay a Summer Session registration fee, nor a deposit fee, nor a laboratory fee. Tuition fees are as follows:

Half courses	approximately	$57.00
Full courses	approximately	$114.00
Monographs		$300.00

General Information

Graduate students in Education should consult the front section of this Announcement for information concerning the areas listed below. N.B.: All records for graduate students in Education are maintained in the Graduate Studies in Education Office (Room 531). Therefore wherever "Summer Session Office" appears, please substitute "Graduate Studies in Education Office."

Calendar — 1976 Summer Session
ID cards
Late Registration
Residence
Athletic Facilities
Withdrawals
Refunds
Change of Name or Address
Classification of Marks
Transcripts
Parking Regulations
Bookstore Summer Schedule — 1976

Departments and Degrees

Students should report to the Office of their Program Director on the first day of classes to be assured that all registration procedures have been completed.

Departments and Degrees	Department Chairmen Program Directors	Office Number
Educational Administration	R. Tali, Chairman	
M.A. Educational Administration	G. Isherwood	550
M.Ed. Educational Administration	R. Tali	549
Counsellor Education	F. Dumont, Chairman	B132
M.A. Counsellor Education	F. Dumont	
M.Ed. Counsellor Education	F. Dumont	
D.Ed. Counsellor Education	F. Dumont	
Social Foundations of Education	J.K. Jobling, Chairman	545
M.A. Comparative Education	J.P. Lipkin	
M.A. History of Education	J.K. Jobling	
M.A. Philosophy of Education	N.G. Coccalis	
Education Psychology and Sociology	H. Stutt, Chairman	
M.A. Educational Psychology	R. Edwards	518
M.Ed. Special Education	D. Sokolyk	512
Education in English	J.M. O'Hara, Chairman	
M.Ed. Teaching of Reading	F. Greene	B177
Physical Education	R.E. Wilkinson, Chairman	
M.A. Physical Education	J. Chomay	Currie Gym
Education in the Social Sciences	M. Bain, Chairman	
M.Ed. Teaching Geography	J. Wolforth	442
M.Ed. Teaching History	D. Smith	441
Education in Science and Mathematics	W. Searles, Chairman	
M.Ed. Teaching Biology	W. Searles	364
M.Ed. Teaching Chemistry	P. Francoeur	332
M.Ed. Teaching Mathematics	R. Whitwell	420
M.Ed. Teaching Physics	P. Landry	353
Education in Second Languages	M. Buteau, Chairman	351
M.Ed. Teaching French as a Second Language	M. Buteau	

Course Descriptions

EDUCATIONAL ADMINISTRATION

411-612C PRINCIPLES OF EDUCATIONAL ADMINISTRATION (Full Course. Prerequisite: Permission of the Chairman.) This introductory course deals with the following topics: administration as a field of study, organizations, administrative behaviour, personnel administration, communications. First Course.

411-635C FISCAL ACCOUNTABILITY FOR THE SCHOOLS (Half Course. Prerequisite: 411-612 Principles of Educational Administration.) Consideration of the schools' responsibility to the public in maintaining high quality education within the limitations of accountability and organizational framework. Budgeting and evaluation of pupil progress will be studied as the measures of the schools' fulfilment of responsibility.

411-636 ** HUMAN RELATIONS IN EDUCATIONAL ADMINISTRATION (Half Course. Prerequisite: 411-612.) Study of the major tenets of the scientific management movement and the human relations movement in administration and their applicability to educational institutions. Selected works in both areas will be studied and developed as to give students historical insights into modern school management trends.

411-642C DEVELOPMENT AND ADMINISTRATION OF THE SCHOOL CURRICULUM (Full Course.) This course deals with the development of the school curriculum at various age levels and in different settings with the organization of the school and the classroom to implement curricular plans. A study will be made of a variety of organizational schemes and of their development and implementation.

411-647C MANAGEMENT OF EDUCATIONAL SYSTEMS II (Half Course. Prerequisite: 411-612.) An introduction to planning — programming — budgeting systems in education. The historical development, theoretical foundations, mechanics, potentialities and limitations of this approach to resource utilization analysis and planning will be discussed with particular reference to those aspects of alternative approaches employed in a proposal for educational systems.

411-660C COMMUNITY RELATIONS IN EDUCATION (Half Course. Prerequisite: 411-612.) The basic objectives of this course include: The development of school-community analytical skills based upon relevant sociological and political concepts and techniques; the development of skill in establishing and maintaining effective methods of school-community liaison.

** This course will be offered in *either* Summer Session Part I *or* Summer Session Part II.

411-662C POLICY-MAKING IN EDUCATION AT THE PROVINCIAL LEVEL (Half Course. Prerequisite: 411-612.) The process and sources of influence involved in the development and implementation of educational policies at the level of the Provincial Government.

411-671C PRINCIPALSHIP (Half Course. Prerequisite: 411-612.) A study of the principalship from the perspective of role theory. Analysis of theoretical positions and the findings of recent research into the work of a school principal in terms of role conflict. Both theoretical statements and recent research related to the principalship will be considered.

411-673C LEADERSHIP THEORY AND EDUCATIONAL ORGANIZATIONS (Half Course. Prerequisite: 411-612.) A study of past and contemporary notions of leadership. The role of the leader in organizations staffed with professionals. The relationship between leadership and personnel and organizational concepts.

411-683L PRACTICUM IN ADMINISTRATION OF INSTRUCTION III (Half Course. Prerequisite: Permission of the Department.) Planned observation of a specific aspect of administration in a school setting. Practices observed will be examined for their implication of educational systems and for their feasibility in the students' own situation.

COUNSELLOR EDUCATION

412-602C PHILOSOPHY OF GUIDANCE. (Half Course). Philosophical foundations of guidance; history, growth, and recent trends of the guidance movement. Orientation to the field in respect to the functions, scope, organization, and administration of counselling services.

412-603C THEORIES OF PERSONALITY. (Half Course). Study and comparison of contemporary theories of personality. Emphasis upon theories having significance for counselling and assessment principles. Recent research in personality theory.

412-604C DYNAMICS OF GROUP WORK. (Half Course). Study of group organization, with opportunity to develop skills in group leadership. Interpretation of group interaction and typical roles played by members in groups.

412-605C INTRODUCTION TO THEORIES IN COUNSELLING. (Half Course). Correlation and interpretation of counselling data and the study of individual cases. Emphasis on the process in counselling, the counselling relationship, and counselling techniques.

412-611C INDIVIDUAL TESTING. (Half Course). This course is intended to make the student familiar with the individual tests in common use and to give him some degree of proficiency in their application. Special emphasis will be placed on the Binet and Wechsler scales. There will be opportunities for diagnostic testing under supervision.

412-625L/C PRACTICUM IN ELEMENTARY SCHOOL COUNSELLING. Practices in counselling. Adapting to counselling sessions person to person, educational, occupational, and social relationships. Practice with individual cases.

412-626L PRACTICUM IN ELEMENTARY SCHOOL COUNSELLING. (See 412-625L/C for description).

412-640C ADOLESCENT DEVELOPMENT (Half Course.) Normal development of adolescents through young adulthood. Problems and concerns of adolescence which occur with physical, social and personal development, in the context of family and school adjustment.

412-641C PSYCHOLOGICAL TESTING. (Half Course). Theory and application of group tests appropriate for adolescents and adults. Specific instruments; intelligence, aptitude, interest and personality, analyzed in terms of basic concepts, reliability, validity, and practical utilization.

412-642C INFORMATION SERVICES IN THE SECONDARY SCHOOL. (Half Course). Procedures and systems of utilizing and communicating social, educational, and occupational information and materials. Structure of occupations; theories of vocational development.

412-645L/C PRACTICUM IN SECONDARY SCHOOL COUNSELLING. (See course description for 412-625/626).

412-646L PRACTICUM IN SECONDARY SCHOOL COUNSELLING. (See above).

412-662C INFORMATION SERVICES IN STUDENT PERSONNEL WORK. (Half Course). See course description for 412-642.

412-663C ORGANIZATION AND ADMINISTRATION OF SCHOOL PERSONNEL SERVICES. (Half Course). The functions, relationships, organization, and administration of guidance services in the secondary school and student personnel services.

412-665L/C PRACTICUM IN STUDENT PERSONNEL COUNSELLING. (See course description for 412-625/626).

412-666L PRACTICUM IN STUDENT PERSONNEL COUNSELLING. (See above).

SOCIAL FOUNDATIONS OF EDUCATION

413-647C HISTORY OF EDUCATION IN FRENCH CANADA. Consideration of the ideas and institutions relating to education in French Canada from the sixteenth century to the twentieth, with particular attention to the historical antecedents of contemporary problems.

413-650C COMPARATIVE STUDIES OF EDUCATION IN COMMUNIST COUNTRIES. (Full Course.) Analysis of Communist theory and educational practice in the Soviet Union and selected Eastern developing nations. Similarities and differences between communist and non-communist educational systems and the relationship between education and the political order will be stressed.

EDUCATIONAL PSYCHOLOGY

414-610C EDUCATIONAL MEASUREMENT. (Half Course. *N.B. Prerequisite* to 414-602D. THE USES OF STATISTICS IN EDUCATIONAL PROCEDURES. These courses may not be taken concurrently.) Statistical measurements in education; graphs, charts, frequency distributions, central tendencies, dispersion, correlation, and sampling errors.

414-635C STUDIES IN EDUCATIONAL PSYCHOLOGY: LEARNING AND INTELLIGENCE. (Full Course.) The learning section of this course includes an examination of current conceptualization of learning with emphasis on those from which applications have been made to the educational process. The second section of the course deals with theories of intelligence and intellectual processes. Normally a student will have completed 414-602D or its equivalent before being admitted to this course.

SPECIAL EDUCATION

414-642C EDUCATION OF EXCEPTIONAL CHILDREN I (Half Course) Introduction to programs and problems of educating handicapped or gifted children. (related and sequential with 643.)

414-643L EDUCATION OF EXCEPTIONAL CHILDREN II (Half Course) Introduction to programs and problems of educating handicapped or gifted children. (related and sequential half course to 414-642C)

414-643C EDUCATION OF EXCEPTIONAL CHILDREN II (Half Course) see above for description.

414-644C. LEARNING PROBLEMS OF EXCEPTIONAL CHILDREN. (Full Course). Learning process; relationship of various handicapping conditions to difficulties in learning; developmental and corrective programs.

414-645C DIAGNOSIS AND ASSESSMENT OF LEARNING PROBLEMS. (Half Course. Prerequisite: 414-610.) Principles and procedures in the education of pupil growth and achievement and in the diagnosis of the causes of poor achievement. Emphasis will be given to the use and interpretation of tests to be given by the class teacher. Reference will be made to the use by the teacher of tests given outside the classroom by guidance counsellors or psychologists.

414-646C PRACTICUM: DIAGNOSIS AND ASSESSMENT OF LEARNING PROBLEMS. (Half Course). Practice in the administration and interpretation of individual and group tests; use of other-than-teacher test results; collection and use of other pertinent data.

414-653C INDIVIDUALIZED CURRICULA AND SPECIAL TEACHING METHODOLOGY. (Half Course). Methodology and curricula for pupils of different types of exceptionality and at different stages of development; materials, activities, records, grading.

414-654L PRACTICUM: INDIVIDUALIZED CURRICULA AND SPECIAL TEACHING METHODOLOGY. (Half Course). An opportunity will be given to develop individual teaching programs for selected exceptional children. Practice will be given in the use of specialized teaching techniques.

***414-656C CLINIC: REMEDIATION OF SELECTED LEARNING DIFFICULTIES** (Full Course) *Sections I and II.* Participation as special Education teacher in an interdisciplinary team; planning and carrying out of remedial programs for individual pupils, working with parents.

***414-658C SEMINAR: REMEDIATION OF SELECTED LEARNING DIFFICULTIES** (Full Course) *Sections I and II.* Directed and independent study as well as group discussion.

*At present, courses 414-656C and 414-658C include participation as a junior staff member in the Learning Centre under the direction of Dr. M.S. Rabinovitch of the Department of Psychology of McGill.

TEACHING OF READING

427-666C AND 427-667C DIAGNOSIS AND TREATMENT OF READING DISABILITY. (Two related and sequential full courses which cannot be taken separately.) Causes, diagnosis and treatment of reading disability including neurological, physiological, psychological and social factors; use of diagnosis instruments, construction of informal diagnosis measures; observation of diagnosis and treatment in schools, clinics and hospitals; supervised individual case studies including diagnosis and treatment.

TEACHING CHEMISTRY

417-603C INDIVIDUAL READING COURSE (Full Course) Individualized guided study of a topic in the teaching of chemistry selected according to the student's interests and teaching experience.

417-616C INDIVIDUAL READING COURSE (Half Course) see above for description.

417-618C TEACHING CHEMISTRY MONOGRAPH PREPARATION AND PRESENTATION (Double Course) Advising candidates in specific subject areas in the preparation and presentation of a monograph.

TEACHING BIOLOGY

417-638C TEACHING BIOLOGY MONOGRAPH PREPARATION AND PRESENTATION (Double Course) Advising candidates in specific subject areas in the preparation and presentation of a monograph.

TEACHING PHYSICS

417-648C TEACHING PHYSICS MONOGRAPH PREPARATION AND PRESENTATION (Double Course) Advising candidates in specific subject areas in the preparation and presentation of a monograph.

TEACHING MATHEMATICS

428-618C TEACHING MATHEMATICS MONOGRAPH PREPARATION AND PRESENTATION (Double Course) Advising candidates in specific subject areas in the preparation and presentation of a monograph.

TEACHING GEOGRAPHY

183-319C GEOGRAPHY OF ECONOMIC DEVELOPMENT (Half Course) Analysis of the role of geography in the field of economic development; growth and development theories on different geographic scale levels; behaviour of selected economic activities in change process; regional economic development in relation to changing resource utilization; development planning.

183-321C CLIMATIC ENVIRONMENTS (Half Course) Scope of climatology, physical, dynamic and energy balances, governing meteorological processes. Movement and circulation of the atmosphere on a local and global scale. Resulting weather systems.

183-333L MONTREAL URBAN FIELD STUDIES (Half Course) Encounters with social and physical environments of Montreal. A phenomenology of the city. This course has a modular organization with weekly individual field exploration by class members.

183-404C CONTEMPORARY GEOGRAPHY (Full Course) An analysis of the main branches of modern geography with emphasis on theoretical and methodological development.

TEACHING HISTORY

101-642C CANADIAN EXTERNAL RELATIONS 1867 TO THE PRESENT. (Full Course) An examination of Canada's relationship with the Empire-Commonwealth, the United States and the international community. (OPEN ONLY TO STUDENTS IN THE M.ED. TEACHING OF HISTORY PROGRAM).

101-692C. SEMINAR IN CANADIAN HISTORIOGRAPHY. (Full Course.) A study of the problems which a historian faces as he practises his profession. In particular, learning the techniques of study, research, and expression in history, defining the scope and philosophy of history, and becoming familiar with trends and types of historical writing, with particular reference to Canadian history. (OPEN ONLY TO STUDENTS IN THE M.ED. TEACHING OF HISTORY PROGRAM).

TEACHING FRENCH

***431-615C L'UTILISATION DES MOYENS AUDIO — VISUELS DANS L'ENSEIGNEMENT DES LANGUES** (Full Course) Review of the principles and applications of technology used in the teaching of French as a second language. Practice in planning, producing and evaluating audio-visual aids and techniques.

431-618C TEACHING FRENCH MONOGRAPH PREPARATION AND PRESENTATION (Double Course).

PHYSICAL EDUCATION

434-662C ADVANCED EXERCISE PHYSIOLOGY (Full Course) A comprehensive treatment of the behaviour of physiological processes in reponse to exercise. Emphasis is given in such areas as: nature of muscular activity, regulation during exercise, effects of physical training, genetic, nongenetic and environmental factors limiting the individual's adaptive value. A laboratory program is designed to familiarize the student with methods and problems of ergophysiological research.

Offered in conjunction with the Faculty of Medicine.

434-664C PSYCHOLOGY OF MOTOR PERFORMANCE (Full Course) Study of the application and analysis of psychological principles and theories to motor learning and performance. Emphasis on selected aspects such as individual differences, transfer, interference, stress, reminiscence and factors affecting motor performance.

***434-672C EXPERIMENTAL PROBLEMS** (Full Course) Study in either ergo-physiology, biomechanics, psychology of motor performance or motor performance for exceptional children. To provide an opportunity to conduct a research project and develop an awareness of the problems involved in the area of concentration under departmental supervision.

*AWAITING APPROVAL

GRADUATE COURSES IN EDUCATION 1976 SUMMER SCHOOL TIMETABLE

Courses: 2 hours per day, 5 days per week, Monday to Friday

Summer Session	Part I	Full	(May 10 — June 18)
	Term 1	Half	(May 10 — May 28)
	Term 2	Half	(June 1 — June 18)
Summer Session	Part II	Full	(July 5 — Aug. 13)
	Term 1	Half	(July 5 — July 23)
	Term 2	Half	(July 27 — Aug. 13)

The numbers of the rooms where courses will be held will be posted by the elevators on each floor and in the McTavish St., Entrance Lobby.

Course No.	Sect.	Course Title	Term	Time
Educational Administration				
411-612C	1	Principles of Educational Administration	Full	8:00
411-635C	1	Fiscal Accountability for the Schools	1st	8:00
411-636**	1	Human Relations in Educational Administration	TBA	10:30
411-642C	1	Development and Administration of School Curriculum	Full	8:00
411-647C	1	Management of Educational Systems II	1st	10:30
411-660C	1	Community Relations in Education	1st	10:30
411-662C	1	Policy Making in Education at Provincial Level	1st	8:00
411-671C	1	Principalship	1st	10:30
411-673C	1	Leadership Theory and Educational Organizations	1st	10:30
411-683L	1	Practicum in Administration of Instruction III	*	16:00

*to be given May 10-May 28

** to be given in *either* Part I *or* Part II

Counsellor Education

412-602C	1	Philosophy of Guidance	2nd	8:00
412-602C	2	Philosophy of Guidance	2nd	13:30
412-603C	1	Theories of Personality	1st	10:30
412-604C	1	Dynamics of Group Work	2nd	10:30
412-604C	2	Dynamics of Group Work	1st	8:00
412-604C	3	Dynamics of Group Work	2nd	10:30
412-605C	1	Introduction to Theories in Counselling	2nd	8:00
412-611C	1	Individual Testing	1st	13:30
412-611C	2	Individual Testing	2nd	10:30
412-625L	1	Practicum in Elementary School Counselling	*	18:00
412-625C	1	Practicum in Elementary School Counselling	1st	16:00
412-626L	1	Practicum in Elementary School Counselling	**	18:00
412-640C	1	Adolescent Development	1st	13:30
412-641C	1	Psychological Testing	1st	8:00
412-641C	2	Psychological Testing	1st	13:30
412-641C	3	Psychological Testing	2nd	13:30
412-642C	1	Information Services in Secondary School	2nd	10:30
412-642C	2	Information Services in Secondary School	1st	16:00
412-645L	1	Practicum in Secondary School Counselling	**	18:00
412-645C	1	Practicum in Secondary School Counselling	1st	16:00
412-646L	1	Practicum in Secondary School Counselling	*	18:00
412-662C	1	Information Services in Student Personnel Work	1st	16:00
412-662C	2	Information Services in Student Personnel Work	2nd	10:30
412-663C	1	Organization and Administration of School Personnel Services	2nd	16:00
412-663C	2	Organization and Administration of School Personnel Services	1st	10:30
412-665L	1	Practicum in Student Personnel Counselling	**	18:00
412-665C	1	Practicum in Student Personnel Counselling	1st	16:00
412-666L	1	Practicum in Student Personnel Counselling	*	18:00

**to be given May 10 — May 28

* to be given June 1 — June 18

Social Foundations

413-647C	1	History of Education in French Canada	Full	10:30
413-650C	1	Comparative Studies of Education in Communist Countries	Full	8:00

Educational Psychology

414-610C–	1	Educational Measurement	**	8:00
414-610C	2	Educational Measurement	1st	8:00
414-610C	3	Educational Measurement	1st	10:30
414-610C	4	Educational Measurement	1st	8:00
414-635C	1	Studies in Educational Psych: Learning & Intelligence	Full	8:30

— Section 1 only is restricted to those taking 414-645C

** to be given July 5 — August 13

Special Education

414-642C	1	Education of Exceptional Children I	1st	10:30
414-642C	2	Education of Exceptional Children I	1st	10:30
414-643L	1	Education of Exceptional Children II	*	TBA
414-643C	1	Education of Exceptional Children II	1st	8:00
414-644C	1	Learning Problems of Exceptional Children	Full	10:30
414-645C–	1	Diagnosis and Assessment of Learning Problems	**	8:00
414-646C	1	Practicum of Diagnosis and Assessment	2nd	10:30
414-653C	1	Individual Curricula and Special Teaching Methodology	2nd	10:30

414-654L	1	Practicum Curricula and Special Teaching Methodology	*	TBA
414-656C ***	1	Clinic: Remediation of Selected Learning Difficulties	Full	Ind. Sched
414-658C***	1	Seminar Remediation of Selected Learning Difficulties	Full	Ind. Sched

— Restricted to those taking 414-610C, Section 1.

* to be given May 10 — May 28

** to be given July 5 — August 13

*** at present courses 414-656C and 414-658C include participation as a junior staff member in the learning centre under the supervision of Dr. M.S. Rabinovitch of the Department of Psychology of McGill University

Teaching of Reading (Please consult the Program Director for details)

N.B. Permission to register must be obtained from the Reading Centre BEFORE May 1st.

427-666C	1	Diagnosis and Treatment of Reading Disabilities I	Full	Ind. Sched
427-666C	2	Diagnosis and Treatment of Reading Disabilities I	Full	Ind. Sched
427-667C	1	Diagnosis and Treatment of Reading Disabilities II	Full	Ind. Sched
427-667C	2	Diagnosis and Treatment of Reading Disabilities II	Full	Ind. Sched

Teaching Chemistry

417-603C	1	Individual Reading Course	Full	TBA
417-616C	1	Individual Reading Course	TBA	TBA
417-618C	1	Teaching Chemistry Monograph Preparation and Presentation	Double	8:00

Teaching Biology

417-638C	1	Teaching Biology Monograph Preparation and Presentation	Double	8:00

Teaching Physics

417-648C	1	Teaching Physics Monograph Preparation and Presentation	Double	8:00

Teaching Mathematics

428-618C	1	Teaching Mathematics Monograph Preparation and Presentation	Double	Ind. Sched

Teaching French

431-615C*	1	L'utilisation des moyens audio-visuels dans l'enseignement des langues	Full	10:30
431-618C	1	Teaching French Monograph Preparation and Presentation	Double	Ind. Sched

Teaching Geography

183-319C	1	Geography of Ecoromic Development	3 cr.	10:30
183-321C	1	Climatic Environment	3 cr.	TBA
183-333L*	1	Montreal Urban Field Studies	3 cr.	16:00
183-404C	1	Contemporary Geography	6 cr.	8:00

*to be given May 10 — May 28

Teaching History

101-642C	1	Canadian External Relations 1867 — Presen	Full	10:30
101-692C	1	Seminar in Canadian Historiography	Full	10:30

Physical Education

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434-672C	1	Experimental Problems	Full	8:00

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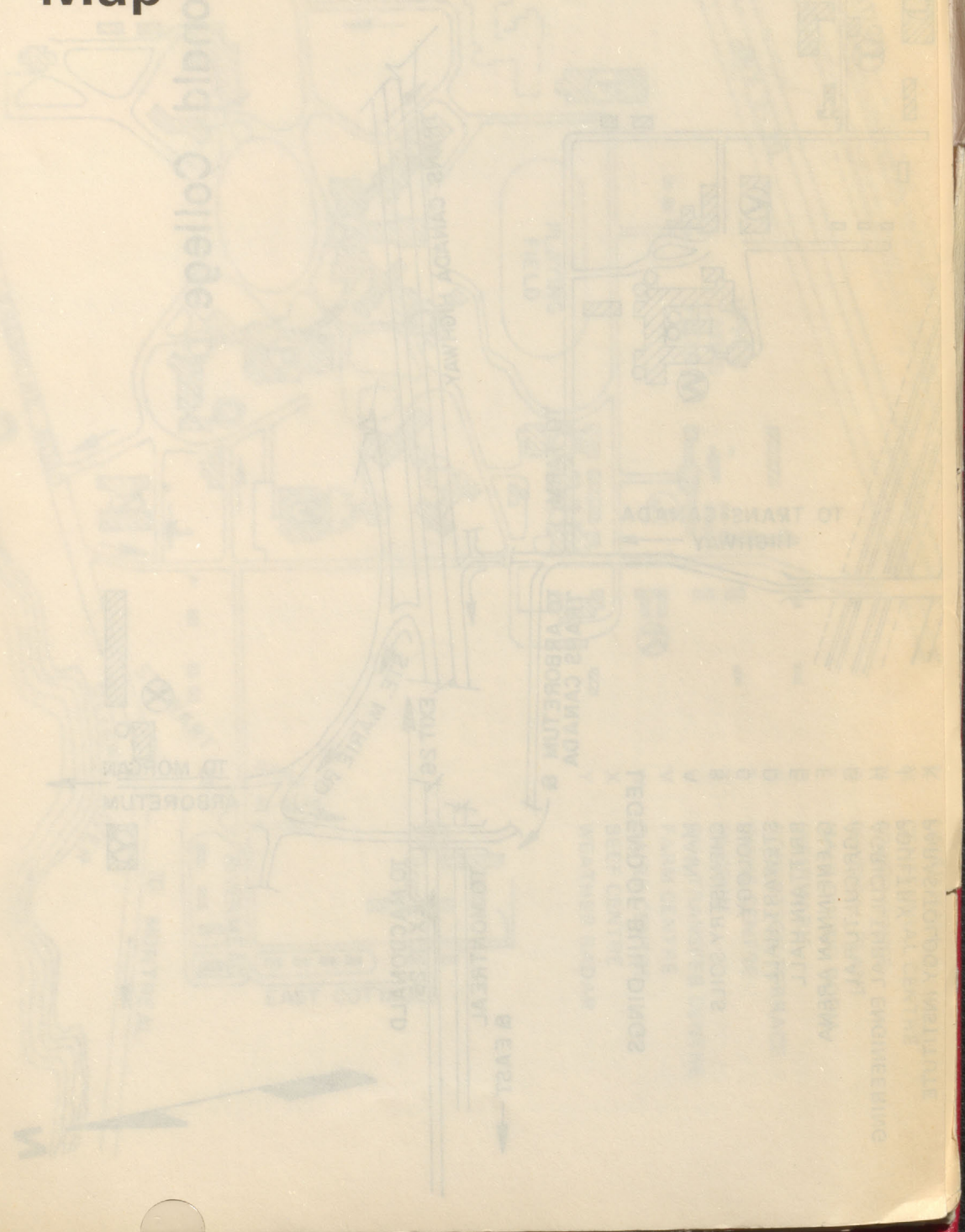
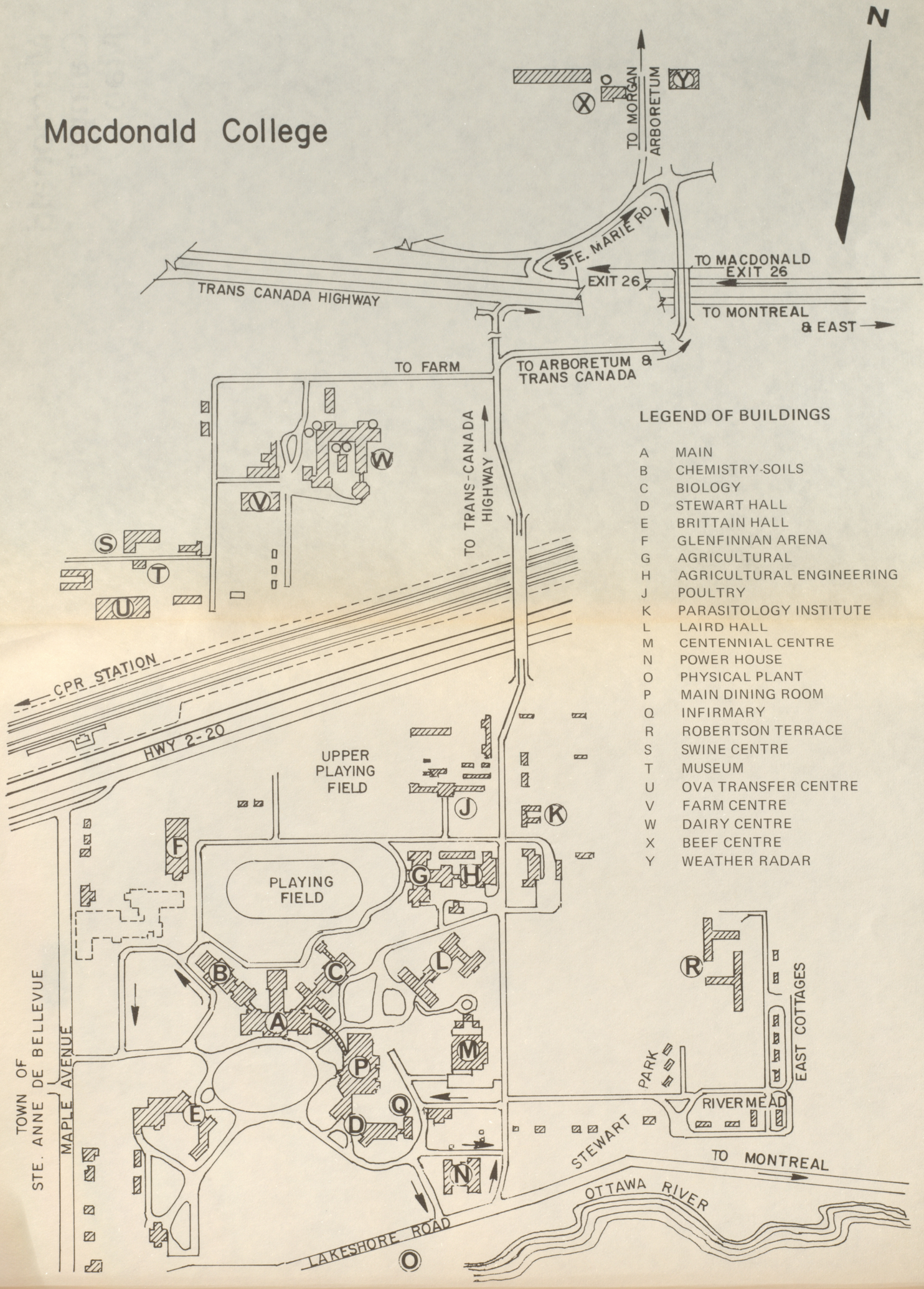
Macdonald Campus Map

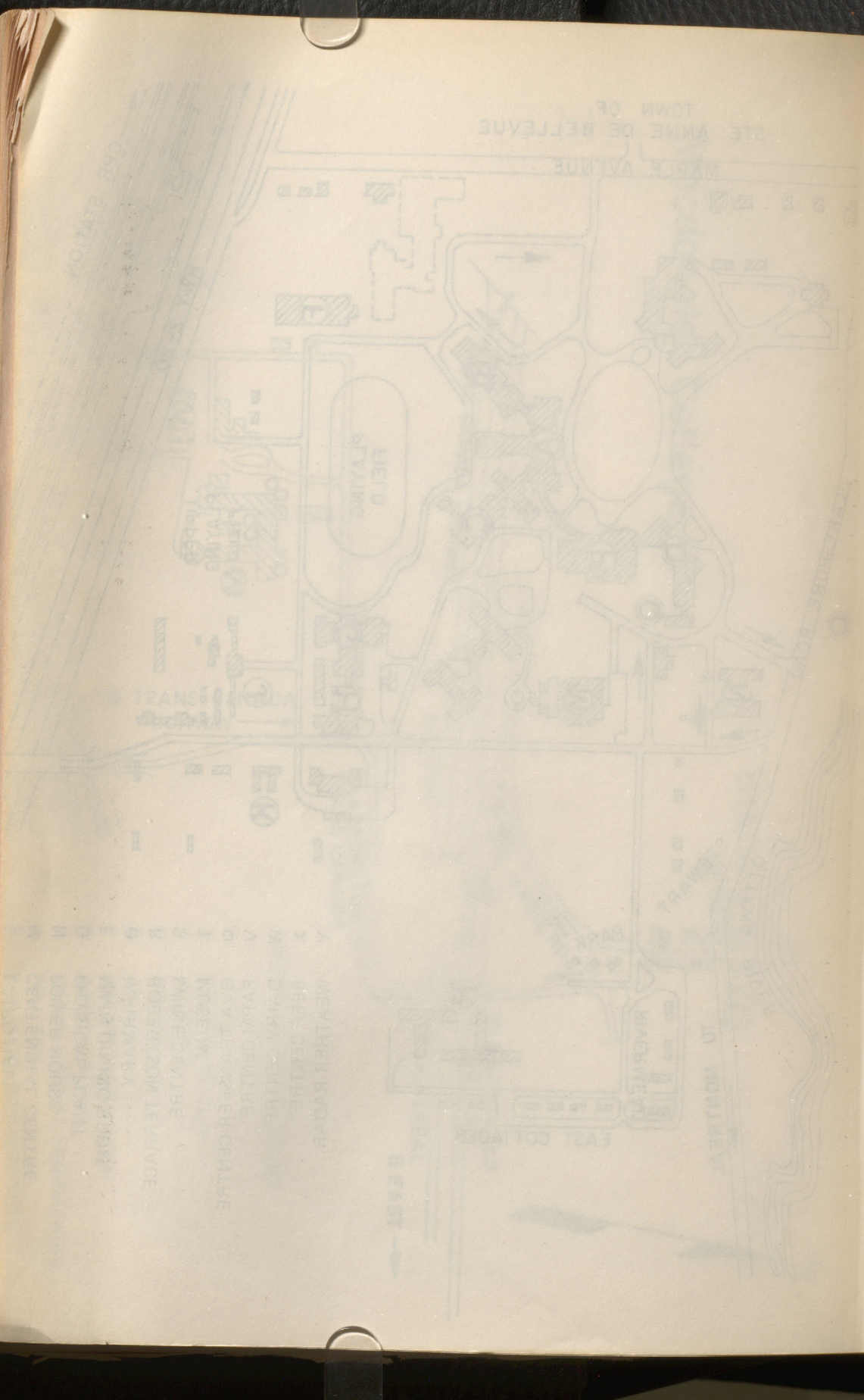


Macdonald College



LEGEND OF BUILDINGS

A	MAIN
B	CHEMISTRY-SOILS
C	BIOLOGY
D	STEWART HALL
E	BRITTAIN HALL
F	GLENFINNAN ARENA
G	AGRICULTURAL
H	AGRICULTURAL ENGINEERING
J	POULTRY
K	PARASITOLOGY INSTITUTE
L	LAIRD HALL
M	CENTENNIAL CENTRE
N	POWER HOUSE
O	PHYSICAL PLANT
P	MAIN DINING ROOM
Q	INFIRMARY
R	ROBERTSON TERRACE
S	SWINE CENTRE
T	MUSEUM
U	OVA TRANSFER CENTRE
V	FARM CENTRE
W	DAIRY CENTRE
X	BEEF CENTRE
Y	WEATHER RADAR



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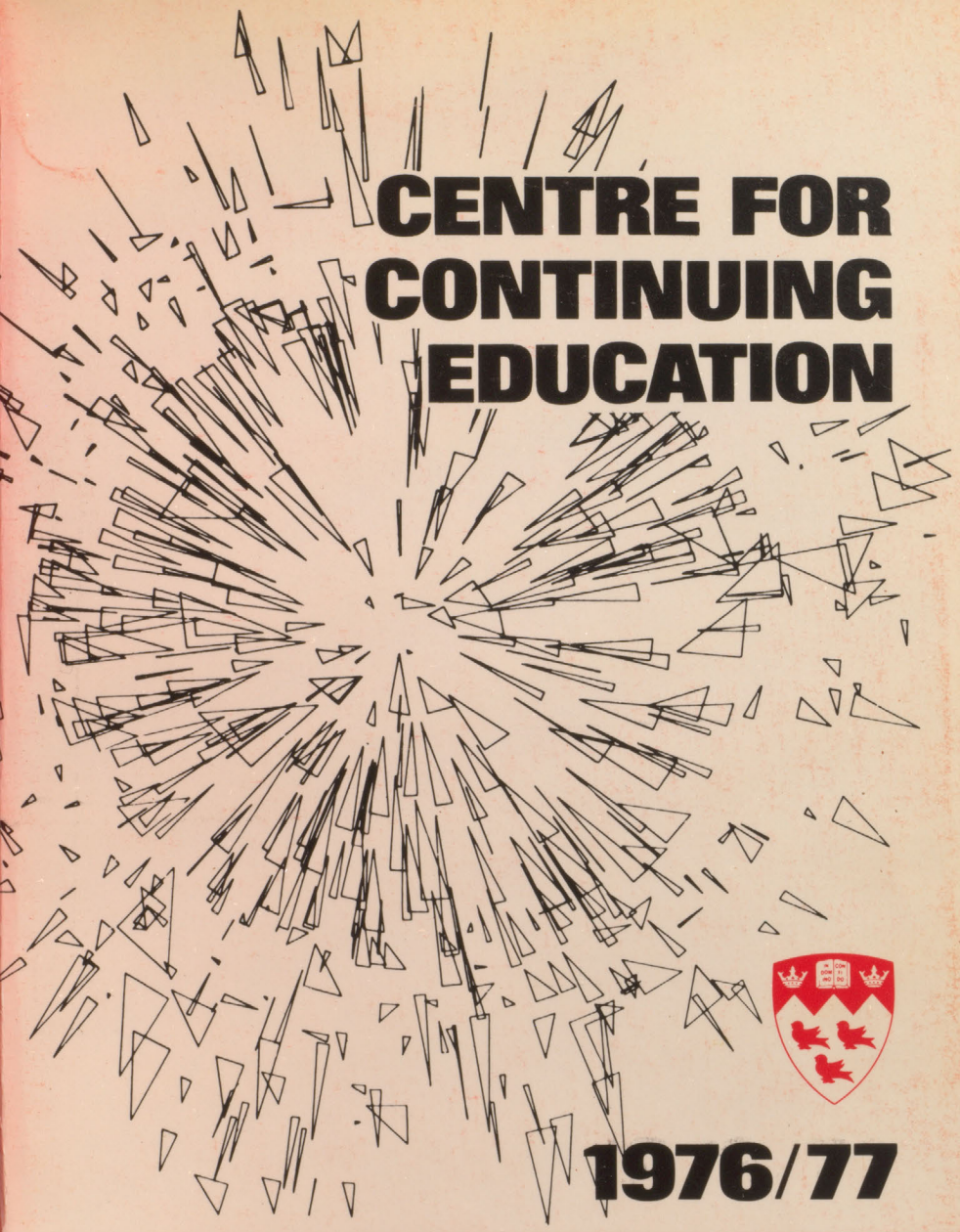


CENTRE FOR CONTINUING EDUCATION

1976/77

McGill University
Montreal

The Centre reserves the right to make changes without prior notice to the information contained in this publication, including the alteration of various fees, schedules and the revision or cancellation of particular courses.

Registration will be on a first come first served basis.

IT IS THE RESPONSIBILITY OF EACH STUDENT TO READ, UNDERSTAND, AND ABIDE BY THE REGULATIONS AND PROCEDURES PRINTED IN THIS BOOKLET.

McGill University

CENTRE FOR CONTINUING EDUCATION 1976-77

Strathcona Hall
772 Sherbrooke St. West
392-5244

1. ADMINISTRATIVE OFFICERS
2. INTRODUCTION
3. GENERAL INFORMATION
4. CHARTERED ACCOUNTANCY PROGRAM — 392-6708
5. COMMUNITY SERVICES — 392-4905
   Occupational Preparation, Social Work
6. EDUCATION — 392-4757
   Bachelor of Education, Diploma Programs, Off Campus Courses.
7. ENGINEERING — 392-4935
   General Courses, Textile Technology, Computer Programming and Master in Engineering.
8. LANGUAGES — 392-4901
   Arabic, Chinese, Croatoserbian, English, French, German, Greek, Hungarian, Italian, Japanese, Portuguese, Russian, Spanish, Translation
9. LIBERAL ARTS — 392-4905
   Fine and Applied Arts, Communication Arts, Human Behaviour, Canadian Studies
10. MANAGEMENT GRADUATE — 392-6700
    Diploma in Management, Diploma in Management (Tourism), MBAI part time
11. MANAGEMENT UNDERGRADUATE AND CERTIFICATE PROGRAMS, — 392-6704
    B. Com. part time, certificates – McGill and external
12. INDEX.

CALENDAR FOR 1976–77 SESSION

1976

Monday, 21 June	Preregistration for Education. (refer Education section)
Monday, 16 August to Friday, 20 August	Registration for Management Undergraduate and Certificate Programs, returning Languages students and Translation Program.
Monday, 23 August to Friday, 27 August	Registration for Diploma in Management, Diploma in Management (Tourism), MBAI and Chartered Accountancy Program.
Monday, 30 August	Courses commence in Management Undergraduate and Certificate Programs.
Monday, 6 September	Labour Day. Administrative offices closed. No evening lectures.
Tuesday, 7 September to Wednesday, 8 September	Registration for English language courses.
Thursday, 9 September to Friday, 10 September	Registration for French language courses.
Tuesday, 7 September to Friday, 10 September	Registration for all other Language courses, Liberal Arts, Engineering, Community Services and Education.
Tuesday, 7 September	Courses commence in Diploma in Management, Diploma in Management (Tourism), MBAI and Chartered Accountancy Program.
Monday, 13 September	Courses commence in Liberal Arts, Engineering and Education.
Monday, 20 September	Courses commence in Languages and Community Services.
Monday, 11 October	Thanksgiving Day. All Administrative offices closed. No evening lectures.
Monday, 22 November to Friday, 26 November	Preregistration in January courses for returning students.
Monday, 6 December	Final lecture of courses in Diploma in Management, Diploma in Management (Tourism), MBAI and Chartered Accountancy Program.
Wednesday, 8 December to Saturday, 18 December	Final examinations for Diploma in Management, Diploma in Management (Tourism), MBAI and Chartered Accountancy Program.
Monday, 13 December	Final lecture in all other courses except Education and Engineering.
Monday, 13 December to Thursday, 23 December	Final Examinations.
Thursday, 16 December	Final lecture of courses in Education courses.
Monday, 27 December to Friday, 31 December.	All Administrative offices closed.

1977

Monday, 3 January	All continuing courses resume except Liberal Arts.
Monday, 3 January to Friday, 7 January	Registration for all Continuing Education courses.
Monday, 10 January	Courses resume in Liberal Arts.
Monday, 10 January	Courses commence in Diploma in Management, Diploma in Management (Tourism), MBAI, Management Undergraduate and Certificate Programs, Liberal Arts and Education.
Monday, 17 January	Courses commence in Chartered Accountancy Program, Engineering, Languages and Community Services.
Monday, 4 April	Last lecture of courses in Diploma in Management, Diploma in Management (Tourism), MBAI, Liberal Arts and Languages.
Friday, 8 April	All Administrative offices closed.
to Monday, 11 April	Easter Monday. All Administrative offices closed. All classes meet.
Monday, 11 April	Last lecture of courses in Chartered Accountancy Program.
Monday, 18 April	Last lecture of courses in Management Undergraduate and Certificate Programs.
Monday, 18 April to Friday, 6 May	Final examinations and Language Translation finals.
Monday, 25 April to Friday, 29 April	Registration for summer courses.
Monday, 2 May to Saturday, 7 May	Examinations in Chartered Accountancy Program.
Monday, 2 May	Courses commence in Languages.
Monday, 9 May	Courses commence in Management Graduate.
Monday, 16 May	Courses commence in Chartered Accountancy Program.
Monday, 13 June and Wednesday, 15 June	Translation Entrance examinations.
June	Convocation

1 ADMINISTRATIVE OFFICERS

ROBERT E. BELL, C.C., B.A., M.A.(U.B.C.), Ph.D.,(McG) D.Sc.(U.N.B. and Laval), LL.D.(Tor.), F.R.S., F.R.S.C. *Principal and Vice-Chancellor*

EIGIL PEDERSEN, B.A.(S.G.W.), M.A.(McG) Ed.D.(Harv.), *Vice-Principal (Academic)*

LEO YAFFE, B.Sc., M.Sc.(Man.), Ph.D.(McG), F.C.I.C., F.A.P.S., F.R.S.C. *Vice-Principal (Administration and Professional Faculties)*

ALLAN C. McCOLL, D.F.C., B.Com.(McG), C.A. *Vice-Principal (Finance)*

WALTER F. HITSCHFELD, B.A.Sc. (Tor.), Ph.D.(McG), F.R.Met.S. *Vice-Principal (Research)*

A.C. BLACKWOOD, B.Sc., M.Sc.(Alta), Ph.D.(Wis), F.R.S.C. *Vice-Principal (MacDonald College)*

J. ALISTAIR DUFF, B.A., M.A.(Cambridge), C.A. *Director, Centre for Continuing Education*

REAL BOULIANNE, B.A.(S.G.W.), M.A.(Ottawa), Ph.D.(McG) *Associate Director (Education)*

EDWARD BURNETT, B.A.(S.G.W.), M.Sc.(McG) *Associate Director (Management Undergraduate and Certificate Programs)*

GIOVANNA CUCCHIARA, *Administrative Assistant*

PETER G. CUNNINGHAM, C.A.(S.A.) *Assistant Director*

WILLARD H. ELLIS, B.A.(Queen's), M.B.A.(W. Ontario) *Associate Director (Management Graduate)*

DAVID R. GOBEIL, B.Sc., M.Sc.(Tor.), C.A. *Associate Director (Chartered Accountancy Program)*

JANE T. HOLLANDER, B.S.Ed.(N.J. State) *Co-ordinator (Liberal Arts)*

EVA N. ST-PIERRE, *Co-ordinator (Engineering)*

PAMELA D. STEWART, B.A.(U. of Montreal), M.A.(McG) *Associate Director (Languages)*

2 INTRODUCTION

The Centre is located in Strathcona Hall, 772 Sherbrooke St. W., at the corner of McGill College Avenue. The Information Office (Room 101), in Strathcona Hall, is open for general information throughout the year from Monday to Friday 9:00 a.m. to 5:00 p.m. and during term time from Monday to Thursday until 8:30 p.m.

The emphasis in the Centre is upon part time study programs leading to Diplomas and Certificates, although regular day students are enrolled in some courses for degree credit as are part time students who have been accepted by Faculty for credit towards a degree.

This calendar includes all courses that commence in August, September or October and many that commence in January. Supplementary leaflets are available in December describing all courses commencing in January and other leaflets, available on request in April, list courses in May, June and July.

3 GENERAL INFORMATION

REGISTRATION

The following information refers to the Centre as a whole, for specific information please refer to the department.
Registration must be made in person or by proxy during the official registration periods listed below.

Fall and Winter registration will take place in REDPATH HALL. Summer registration and Preregistration will take place in STRATHCONA HALL.

All Education Registrations will take place in STRATHCONA HALL.

FALL 1976 REGISTRATION

MANAGEMENT UNDERGRADUATE & RETURNING LANGUAGE STUDENTS

16–19 August	9:00 - 8:00 pm
20 August	9:00 - 4:30 pm

CHARTERED ACCOUNTANCY PROGRAM MANAGEMENT GRADUATE

23–26 August	9:00 - 8:00 pm
27 August	9:00 - 4:30 pm

LANGUAGES
ENGLISH

7 & 8 September	9:00 - 8:00 pm

FRENCH

9 September	9:00 - 8:00 pm
10 September	9:00 - 4:30 pm

COMMUNITY SERVICES
EDUCATION (Strathcona Hall)
ENGINEERING
FOREIGN LANGUAGES
LIBERAL ARTS

7–9 September	9:00 - 8:00 pm
10 September	9:00–4:30pm

PREREGISTRATION WINTER 1977 (Strathcona Hall) for all RETURNING students

22–26 November	9:00 - 4:00 pm

WINTER 1977

LANGUAGES
FRENCH

3 & 4 January	9:00 - 8:00 pm

ENGLISH

5 & 6 January	9:00 - 8:00 pm
7 January	9:00 - 4:30 pm

ALL OTHER COURSES

3–6 January	9:00 - 8:00 pm
7 January	9:00 - 4:30 pm

In no case will telephone applications be accepted or commitments be made by telephone for acceptance into a course. A student is registered and accepted into a course only when he has received a student card of admission.

NOTE:
The University reserves the right to restrict registration in any class, to make substitutions or additions to the published list of instructors and to cancel any class for which an insufficient number of registrations has been received.

FEES

The fees as indicated for each course are payable at time of registration. Students accepted by Faculty into a degree program will be charged $19.00 per credit.

PENALTIES

Late Registration	$10.00	(non-refundable)
Refunds	5.00	(see refunds)
Transfers	5.00	(see transfers)
Instalment on fees	5.00	(with special permission)
Returned or void cheques	5.00	

CANCELLED COURSES

In the event of a course being cancelled by the Centre for Continuing Education (whether due to insufficient registrations or not) students will be entitled to full refund of fees paid. Presentation of the student card is necessary for the claim and must be made within two months of the cancellation of the course.

REFUNDS

To obtain a refund, the Student Card of Admission, library card and any material handed out in class must reach the Centre for Continuing Education before the second lecture in the course is given; this can be done by mail or in person. A refund, less $5.00 per course, will be mailed within six weeks. In limited enrolment courses of twelve lectures or less, the refund will be pro rata, less the regular charge of $5.00. No refund wll be made to a student who registers after the second lecture in a course.

The Centre for Continuing Education is not responsible for any fees paid to an external association or institute.

Allowances cannot be made for a change of personal plans including transfer from Montreal or for additional commitments which a student may accept after arranging his course schedule.

TRANSFERS

Students may transfer from one class to another AFTER the first lecture and BEFORE the date of the third lecture in both courses, provided that registration for the new course is still open. A charge of $5.00 will be made for a transfer from one course to another or from one section of a course to another section. A transfer cannot be made by speaking to the instructor or telephoning the Centre; the student must bring his Student Card of Admission to the Centre.

WITHDRAWALS

Ceasing to attend a class or notifying the lecturer does not constitute a withdrawal, nor can telephone calls be accepted as notification of withdrawal.

A student is held responsible for all courses in which he registers unless he officially withdraws in writing and returns his student card prior to the completion of 50% of the course.

No refund is payable and no record of registration will appear on the students academic record.

Students who wish to withdraw after the deadline may, under special circumstances, withdraw with permission and will receive a "W" on their record.

In order to conform with the policy for day students, students at the Centre registered in part time degree programs requesting withdrawal from a course and having no record of the course appear on his/her transcript, must do so **no later than six weeks after the start of lectures in that course.**

LIMITED CLASS

The size of a class will be limited in courses where the progress of the student is dependent upon his participation and upon the individual attention he receives from the lecturer. It will also be limited in courses where equipment determines the number of students who can be accommodated. In all such cases, enrolment is on a "first come, first served" basis.

CANCELLATION OF LECTURES

Lectures are cancelled by the Centre in cases of emergency. Cancellations for CONTINUING EDUCATION courses will be announced over the radio whenever possible. In such cases lectures will be made up at a time mutually convenient to the students and lecturer.

EXAMINATIONS

An examination will be available in the majority of courses. Examinations may be written in English or French. Students will be notified by mail of their results. No examination results will be given by telephone; **they will be posted in Strathcona Hall three to four weeks after the date of the final examination.**

Students who are seeking credit for a Diploma or Certificate who are unable to write the final examination for reasons of health must submit a medical certificate to the Centre.

GRADING SYSTEM

The Centre uses the grading system common to the University. Certain programs have further requirements. Students should refer to the information on their program.

Unless otherwise noted the grading will be as follows:

UNDERGRADUATE LEVEL

A	(80 - 100%)	Satisfactory Pass
B	(65 - 79%)	
C	(55 - 64%)	
*D	(45 - 54%)	Conditional Pass
F	(0 - 44%)	Failure
P		Pass

GRADUATE LEVEL

A	(80 - 100%)	Pass
B	(65 - 79%)	
F	(0 - 64%)	Failure
P		Pass

CR	CREDIT GRANTED	A student admitted to a program receives credit for the course passed on previous qualifications, resulting in fewer credits or courses necessary for completion of the program.
EX	EXEMPTION GRANTED	A student admitted to a program is exempted from the particular course but must substitute another to obtain the requisite credits.
J	ABSENT, FAILED	A student is registered, does not write the examination or do other essential work and has no valid reason.
K	INCOMPLETE	A student has valid reasons for not having completed essential term papers or research.
L	DEFERRED	A student's final examination has been deferred with approval of the associate director.
NC	NON CREDIT COURSE	Indicates a non credit course for which marks are not given.
W	WITHDREW	A student drops a course with permission of the associate director.

*Although D is a passing grade, it will not permit entry into a subsequent course for which it is a prerequisite, nor will it be recognized if the course is a requisite of the student's program.

CONVOCATION

A Spring Convocation will be held for students who have successfully completed the following programs of study through the Centre for Continuing Education:

Diploma in Translation; Certificates of Proficiency in English, French, German, Italian, Russian, Spanish, Translation; Certificate of Advanced Technology in Dyeing and Finishing; Certificates in Management and Computing Languages..

TRANSCRIPTS

Official transcripts may be obtained upon written request and payment of $2.00 plus 50c for each additional transcript provided the order is given at one time.

REREADS

Students wishing to apply for a reread must do so within 30 days following the posting of the final marks in Strathcona Hall. Students may request rereads of final examinations upon payment of $15.00.

NOTICES

Students should consult the Continuing Education notice board in the building in which their classes are held. They should also consult the notice board located in Strathcona Hall.

BOOKSTORE

Required textbooks and some of the suggested reference texts may be purchased at the McGill University Bookstore, located in the Bronfman building, 1001 Sherbrooke St. West.

In addition to the regular hours of Monday through Friday 9am-5pm, for the convenience of evening students, the bookstore will open as follows:

30, 31 August and 1 September	9:00 - 8:15pm
2 September	9:00 - 4:30pm
7, 8, 9 September	9:00 - 8:15pm
10 September	9:00 - 4:30pm
20, 21, 22, 23 September	9:00 - 8:15pm
24 September	9:00 - 4:30pm

For those students from out of town the bookstore will open Saturday morning 9:00 am to 12 noon, 11 and 25 September.

CHANGE OF ADDRESS

Students should inform the Centre in writing of any change of address and telephone number after registration. The student's number and course number(s) must be indicated.

RECEIPTS

Official receipts for income tax purposes will be mailed in February of each year to all students. Receipts will be mailed to the address on record and students are urged to inform the Centre in writing of any change in address.

OFFICIAL MAILING ADDRESS

All official correspondence with the Centre should be sent to the relevant department at the following address:

CENTRE FOR CONTINUING EDUCATION
MCGILL UNIVERSITY, P.O. BOX 6070, STATION A
MONTREAL, QUEBEC, CANADA
H3C 3G1

CLASSROOMS

A schedule of rooms and buildings will be handed out to all students at time of registration. A master list will be posted on the notice board in Strathcona Hall and will also be found on the Continuing Education notice boards in all buildings.

On the night of the first lecture, students should consult the notice board of the building in which their course is to be held.

SMOKING

Smoking is strictly forbidden in all classrooms at all times.

Students may smoke in the corridors and are asked to use the containers provided.

UNIVERSITY CENTRE

The University Centre is located at 3480 McTavish Street. Cafeteria and Grillroom services are available to Continuing Education students up to 7 p.m.

PARKING

Parking facilities are limited. Students may park in the garage of the McIntyre Medical Sciences building (entrance on Peel Street) on presentation of their student card and payment of 50 cents for the evening. When available parking is permitted on the Campus after 5 pm on payment of $1 for the evening.

SENIOR CITIZENS

Senior citizens may register for courses offered by the Centre upon payment of 20% of the course fee indicated.

Courses having LIMITED registration will only be available to Senior Citizens AFTER the final date of registration when enrolment numbers have been determined. A late registration fee will not be charged in the case of limited classes.

4 CHARTERED ACCOUNTANCY PROGRAM

DAVID GOBEIL
Associate Director
392-4935

INTRODUCTION

Membership in the Order of Chartered Accountants of Quebec (C.A.) entitles one to practice the profession of Public Accountancy in the Province of Quebec. It also provides admission to the accounting profession, composed of numerous accountants working in industry, government and education.

Admission is based upon meeting the following requirements as indicated in Bill 264.

1) possession of a university degree from a recognized institution.
2) completion of an articling period with a Public Accounting firm which is registered with the Order.
3) completion of a program of studies based upon the C.A. syllabus.
4) passing of the Uniform Final Examinations given by the Order.
5) a working knowledge of French

McGill University offers the program in cooperation with the Order. To complete this program one must have passed or have been granted credit for the courses set out on page 14.

Further information can be obtained from:

The Order of Chartered Accountants of Quebec
680 Sherbrooke Street West
Suite 700
Montreal, Quebec
Tel: (514) 288 - 3256

ADMISSION TO PROGRAM

Students registering for the first time must arrange for an official university transcript to be sent to the Associate Director, C.A. Program, in order to determine their program of studies. A program of studies form will be prepared and the student will have to present it at registration time.

COUNSELLING

Counselling will be available by appointment only. There will be no counselling during the registration periods.

EXAMINATIONS

An examination is held at the end of each course unless specifically exempted. Candidates who fail to pass a course may be permitted to write a supplemental examination. To qualify for supplemental privileges, students must first write the final examination in the course and obtain at least 40%. Candidates who fail to pass the supplemental examination will be required to repeat the course.

Students will receive written confirmation of their examination or course results after each term. As the results of each course become available, they will be posted on the Notice Board in Strathcona Hall by STUDENT NUMBER. Results cannot be obtained by telephone.

REREADS

Students may request rereads of final examinations on payment of the required $15.00 fee. Students wishing to apply for a reread must do so within 30 days following the posting of the final marks in Strathcona Hall.

GRADING SYSTEM

The department uses the Graduate Level Grading System common to the Centre

For further details see section 3 (page 7) of the General Information.

LIBRARIES

Full library privileges are available to all students registered in the C.A. Program at the following locations:

1) Howard Ross Library of Management
Samuel Bronfman Building
1001 Sherbrooke St. West

2) McLennan Library
McGill Campus

COURSE INFORMATION

A listing of instructors, books, building and rooms will be distributed at time of registration. Please ask for a copy.

REGULATIONS & PROCEDURES

Please see General Information.

IT IS THE RESPONSIBILITY OF EACH STUDENT TO READ, UNDERSTAND AND ABIDE BY THE REGULATIONS AND PROCEDURES PRINTED IN THIS BOOKLET.

NOTE: Unless otherwise indicated all courses will be repeated in January 1977.

REGULATIONS IN THE C.A. PROGRAM 1976 — 1977

1 SUPPLEMENTALS

A student with a final course mark of 40% or better has the right to sit a supplemental exam on payment of the required $15.00 fee. This right will be forfeited if the exam is not written at the appropriate time:

Date of Final Examination	Date of Supplemental
July 1976	December 1976
December 1976	May 1977
May 1977	July 1977

Those students wishing to sit the supplemental must apply in writing or at Strathcona Hall, 772 Sherbrooke St. West, at least three weeks prior to the exam period and provide proof of eligibility.

2. WITHDRAWALS

Students are not permitted to withdraw from a course after the *Tenth* lecture. Students who do not write the final examination will receive a grade of "J" (Absent) which constitutes a failure.
For further details on Withdrawals see General Information;

3. LIMIT TO FAILURES

(A) Students who first enrolled in a C.A. course after the summer of 1974 have a limit set on the number of failures that they may have during their studies. Each student will be allowed to fail no more than one-third of the courses he is required to complete.
For example, if a student is required to complete 7 courses, he will be allowed 7/3 = 2 1/3 failures, being excluded from the program when he has failed 3 courses. (Final + Supplemental = 1 Failure).

(B) Commencing in September 1974, no student may repeat a course more than ONCE. On the Second failure, a student will be excluded from the program. (Final + Supplemental = 1 Failure).

4. COURSE LOAD

Students are allowed to register for a maximum of two courses in the Fall and Winter Terms and a maximum of four courses in the Summer over a ten-week period.

French Language Requirement

Effective 1 July 1976 the following sections, of The Official Language Act come into effect:

21. No professional corporation shall issue a permit to a person who does not have a working-knowledge of the French language determined in accordance with the standards established for that purpose by regulation of the Lieutenant-Governor in Council.

22. A professional corporation may however issue a temporary permit valid for one year to a person who does not have the working knowledge of the French language required in accordance with section 21. It shall not renew such a permit except with the authorization of the Lieutenant-Governor in Council, when the public interest requires it.

A pamphlet entitled "French Language Requirements for Professionals in Quebec" is available from the Centre for Continuing Education.

Further information can be obtained from the Order of Chartered Accountants of Quebec, 680 Sherbrooke St. W., Suite 700, Montreal, Quebec.

COURSE RESTRUCTURING

The program of 23 courses has been broken down into three levels.

Level I contains the foundation courses upon which the final professional courses are based. Most of these courses would have been completed in a Bachelor of Commerce, Major in Accounting.

Level II is composed of the courses which cover the basic professional skills and accounting knowledge.

Level III is composed of the courses which are most volatile as to content and should be completed shortly before attempting the C.A. Uniform Final Examinations.

The program has a prerequisite structure which will be enforced. Any exceptions must be approved by the Associate Director prior to registration.

Level I should be completed prior to starting Level II, and Level III should be taken the last summer before writing the C.A. Examinations.

LEVEL I

	601-501	Financial Accounting I
	601-502	Financial Accounting II
	601-503	Financial Accounting III
	601-521	Managerial Accounting I
	601-531	Auditing I
	601-541	Taxation I
*	274-641	Finance I
*	273-631	Data Processing & Computers
*	277-674	Survey of Basic Mathematics
*	277-613	Basic Management Statistics
*	279-691	Economic Environment of the Firm
*	279-692	Economic Analysis of Business
	601-551	Law I
	601-561	Management Policy

Note: All courses indicated by an asterisk are also courses in the Diploma in Management Program, Section 10.

LEVEL II

602-604	Financial Accounting IV
602-632	Auditing II
602-622	Managerial Accounting II
602-628	Accounting Case Analysis A or B
602-652	Law II

LEVEL III

603-605	Financial Accounting V
603-634	Auditing III A or B
603-638	Computer Systems — Audit & Control
603-642	Taxation II

OPTIONAL

604-074U Pre - CA Examination Summer School.

SUMMER PROGRAM 1977

Level I

During the summer of 1977, students will be able to complete up to four of the Level I courses. However, Financial Accounting I, Managerial Accounting I, Auditing I and Law I will not be offered.

Level II

Those students planning to write the CA examinations in September 1978 must complete all of the Level II courses before the Summer of 1978. The Level II courses (Law II excluded) will be offered over a 10-weeks period during the Summer of 1977 to those who have completed Level I.

Level III

Those students planning to write the CA examinations in September 1977 must have completed all the Level II courses prior to the Summer of 1977. They will be able to take the four (4) Level III courses during the Summer of 1977 over a 10-week period.

IMPACT OF COURSE ADDITIONS

It is intended that students registered in the program prior to April 1976 should not lose an entire year in writing the CA examinations because of the addition of the two courses.

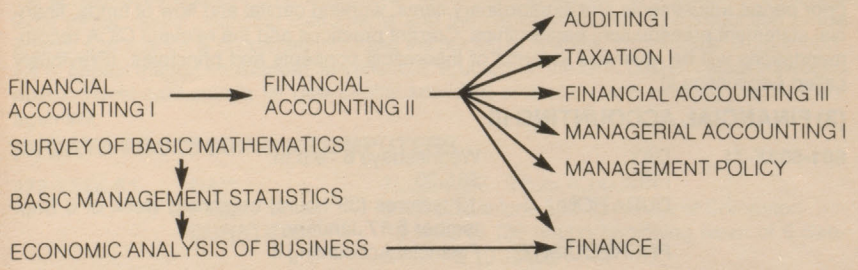
The increase to four (4) courses available in the Summer of 1977 will enable the students to complete one more of the two additions. If this leaves you one short, please contact the Associate Director this summer for assistance in planning your program.

COURSE PREREQUISITES

LEVEL I

LAW I

DATA PROCESSING & COMPUTERS



ECONOMIC ENVIRONMENT OF THE FIRM

(PREREQUISITES INDICATED BY ARROWS)

PRE-CA EXAMINATION SUMMER SCHOOL

The Centre for Continuing Education offers a three week summer school for students writing their C.A. Examinations in September. The purpose of this school is to help students prepare for their final CA Examinations through: (a) a review of the C.A. syllabus and (b) practice at exam writing and tutoring in exam writing techniques.

Only those candidates who have successfully completed the C.A. Program at McGill and are eligible to write the C.A. Final examinations in September may attend the School.

PRE-REGISTRATION

Pre-registration for the Winter Term will be available to all students previously registered in the C.A. Program from 22 to 26 November 1976. 9 a.m. to 4:30 p.m. at the Centre for Continuing Education, 772 Sherbrooke Street, West. Students should register on the assumption that they pass the courses in which they are registered, with a guarantee of a full refund or transfer at no charge if they do not.

Regular registration will be held from 3 to 7 January 1977 in Redpath Hall.

EXAMINATION DATES

First Term: 8 - 18 December 1976.

Second Term: 2 - 7 May 1977.

COURSE DESCRIPTIONS

LEVEL I

(1) FINANCIAL ACCOUNTING I

601-501X-51

DAY: Mondays 6 - 9 p.m.
FEE: $85.00
DURATION: 13 lectures (39 hours) beginning week of 13 September & 17 January.

Introduction to accounting principles and concepts; measurement of accounting income; preparation of financial statements; balance sheet classifications; depreciation; manufacturing statements. (Previously called Accounting IA).

(2) FINANCIAL ACCOUNTING II

601-502X-61

DAY: Tuesdays 6 - 9 p.m.
FEE: $85.00
DURATION: 13 lectures (39 hours) beginning week of 6 September & 17 January.
PREREQUISITE: Financial Accounting I

A detailed review of the accounting for current and long term assets and liabilities, intangibles and shareholders' equity; determination of accounting income and the treatment of prior period adjustments and extraordinary items; working capital and flow of funds; financial statement presentation; partnerships. Current practices and the relevant CICA recommendations will be reviewed in terms of theoretical concepts and principles. (Previously called Accounting II).

(3) FINANCIAL ACCOUNTING III

601-503X-71

DAY: Wednesdays 6 - 9 p.m.
FEE: $85.00
DURATION: 13 lectures (39 hours) beginning week of 6 September & 17 January.
PREREQUISITE: Financial Accounting II

The underlying concepts and accounting treatment of intercorporate investments, business combinations, purchases and pooling of interests, including a detailed examination of the CICA recommendations. Reorganizations; valuation of business enterprises; branches — domestic & foreign; consignments; installment sales; estate and trust accounting. (Previously called Accounting III).

(4) MANAGERIAL ACCOUNTING I

601-521X-81

DAY: Thursdays 6 - 9 p.m.
FEE: $85.00
DURATION: 13 lectures (39 hours) beginning week of 6 September & 17 January
PREREQUISITE: Financial Accounting II

Introduction to cost accounting. Elements of cost; job order and process cost systems; budgeting; standard costs and analysis of variances; cost/volume/profit relationships; variable costing; relevant costs.

(5) AUDITING I

601-531X-51	DAY:	Mondays 6 - 9 p.m.
	FEE:	$85.00
	DURATION:	13 lectures (39 hours) beginning week of 13 September & 17 January
	PREREQUISITE:	Financial Accounting II.

An introduction to: the nature and purpose of auditing, appointment, remuneration, powers, duties and responsibilities of an auditor; internal control; audit programs; financial statement presentation; procedures for verification of items in financial statements; audit reports.

(6) TAXATION I (Not offered in January 1977)

601-541X-61	DAY:	Tuesdays 6 - 9 p.m.
	FEE:	$85.00
	DURATION:	13 lectures (39 hours) beginning week of 6 September
	PREREQUISITE:	Financial Accounting II.

Basic principles of tax law; residence; meaning and computation of taxable income; computation of personal tax; foreign tax credits; capital gains; partnerships; trusts; administration and enforcement; case decisions; Revenue Department bulletins, circulars and rulings; appeals.

(7) FINANCE I

274-641X-51	DAYS:	Mondays 6 - 9 p.m.
274-641X-61		Tuesdays 6 - 9 p.m.
274-641X-81		Thursdays 6 - 9 p.m.
	FEE:	$95.00
	DURATION:	13 lectures (39 hours) beginning week of 6 September & 10 January
	PREREQUISITE:	Financial Accounting II and Economic Analysis of Business

An introduction to financial management and the role of finance, both within the firm and the economy as a whole. The institutional framework of the firm is discussed, including legal forms, taxes, financing instruments and the capital markets. An introduction to the analytics of finance is presented including the pricing of financial instruments, simple models of capital market equilibrium, the financial structure of the firm, cost of capital, dividend policy, investment criteria for new capital spending proposals, and working capital management.

(8) DATA PROCESSING & COMPUTERS

273-631X-61	DAY:	Tuesdays 6 - 9 p.m. (Cobol)
	FEE:	$125.00 (include $30.00 for use of Computer)
	DURATION:	13 lectures (39 hours) beginning week of 6 September & 10 January

The course covers a variety of topics including computer concepts, programming systems, time-sharing, file organization and modern applications of the computer. Instruction will be given in the use of one or more programming languages and students will be assigned problems involving actual use of computer. (Previous equivalent Computers I).

(9) SURVEY OF BASIC MATHEMATICS

277-674X-51	DAY:	Mondays 6 - 9 p.m.
	FEE:	$95.00
	DURATION:	13 lectures (39 hours) beginning week of 13 September and 10 January.

All C.A. students entering the program who do not receive a credit for Survey of Basic Mathematics 277-674 must demonstrate an adequate knowledge of college-entrance

mathematics by successfully completing either: (1) Survey of Basic Mathematics or (2) the Test for College-Entrance Mathematics. (See details on the College-Entrance Test on page 92).

The first part of the course will be spent in an intensive review of basic mathematics including algebra, graphs, functions and logarithms. The first part of the course will introduce the student to calculus including limits, functions of one variable, differentiation, integration and applications; and to matrix algebra including determinants and solutions of simultaneous linear equations. The material covered in this course will be adequate to enable students to follow the usual mathematical applications in business, economics, statistics and operations research. (Previous equivalent Math. & Stats II).

(10) BASIC MANAGEMENT STATISTICS

277-613X-51	DAYS:	Mondays 6 - 9 p.m.
277-613X-71		Wednesdays 6 - 9 p.m.
	FEE:	$110.00 (includes $15.00 for use of computer)
	DURATION:	13 lectures (39 hours) beginning week of 6 September & 10 January.
	PREREQUISITE:	College-entrance Mathematics or equivalent.

Topics covered include: descriptive statistical analysis, common probability distributions (binomial, Poisson, normal), sampling procedures, sampling distributions, estimation, hypothesis testing, distribution-free procedures (tests of goodness of fit and independence), simple and multiple regression, correlation, one-way analysis of variance, classical time series analysis, Bayesian probability analysis. The course stresses the use of computer programs as an aid in statistical analysis. (Previous equivalent Math. & Stats. III)

(11) ECONOMIC ENVIRONMENT OF THE FIRM

279-691X-61	DAYS:	Tuesdays 6 - 9 p.m.
279-691X-71 (John Abbott College Kirkland Campus)		Wednesdays 7 - 10 p.m.
279-691X-81		Thursdays 6 - 9 p.m.
279-691X-82		Thursdays 6 - 9 p.m.
	FEE:	$95.00
	DURATION:	13 lectures (39 hours) beginning week of 6 September & 10 January

This course examines the main macro-economic mechanisms, i.e. income determination and the multiplier theory as well as fiscal policy; the level of investment, the demand for money and the rate of interest as well as the Canadian banking system and deposit creation; the general equilibrium of product and money markets, and monetary and fiscal policies; the dynamics of investment, the employment sector, and the price level and inflation; the balance of payments and international trade as well as methods of dealing with balance-of-payments disequilibria. (Previous equivalent Economics I).

(12) ECONOMIC ANALYSIS OF BUSINESS

279-692X-51	DAYS:	Mondays 6 - 9 p.m.
279-692X-71		Wednesdays 6 - 9 p.m.
279-692X-72		Wednesday 6 - 9 p.m.
	FEE:	$95.00
	DURATION:	13 lectures (39 hours) beginning week of 6 September & 10 January.
	PREREQUISITE:	Basic Management Statistics.

This course is primarily devoted to demonstrating the applications of economic theory and methodology in solving business problems. The following topics are discussed in some detail: demand, production, cost analysis, pricing, growth, concentration, profitability, and resource allocation of the firm. Marketing and sales forecasting techniques are also introduced briefly, and attention is given to opportunities for the application of incremental analysis. (Previous equivalent Economics II).

(13) LAW I

601-551X-81	DAY:	Thursdays 6 - 9 p.m.
	FEE:	$85.00
	DURATION:	13 lectures (39 hours) beginning week of 6 September & 17 January

Sources and administration of law; the Canadian Constitution and the division of powers; the Quebec Civil Code comprising the law of persons, the law of property, obligations, contracts, sale, lease and hire, mandate, suretyship, hypothecs and prescription.

(14) MANAGEMENT POLICY

601-561X-51

DAY:	Mondays 6 - 9 p.m.
FEE:	$85.00
DURATION:	13 lectures (39 hours) beginning week of 13 September & 17 January
PREREQUISITE:	Financial Accounting II.

This is an integrating course which examines the theory of organizations, goals, behaviour of individuals and groups, organization structure and design. It looks also at the role of top management in the formulation and administration of policy. (Previously called Management II).

LEVEL II

(15) FINANCIAL ACCOUNTING IV

602-604X-81

DAY:	Thursdays 6 - 9 p.m.
FEE:	$100.00
DURATION:	13 lectures (39 hours) beginning week of 6 September & 17 January.
PREREQUISITE:	Level I

Advanced topics in financial accounting including: earnings per share; diversified operations reporting; foreign currency translation; statement of changes in financial position; shareholders' equity—retained earnings, extraordinary items, prior period adjustments; financial statement presentation and footnotes; interim reporting and subsequent events and contingencies; accounting for prospectuses, pension costs and corporate income taxes; specialized accounting—financial institutions, fund, real estate, construction, lease, extractive industries and franchises. Detailed study of the relevant CICA and Canada Business Corporations Act requirements. (Previously called Accounting IV).

(16) AUDITING II

602-632X-71

DAY:	Wednesdays 6 - 9 p.m.
FEE:	$100.00
DURATION:	13 lectures (39 hours) beginning week of 6 September & 17 January.
PREREQUISITE:	Level I.

This course is to continue the examination of the role of the attest auditor. The topics covered include professional practice, auditing standards, evaluation of internal control, audit techniques and procedures, and audit reporting.

(17) MANAGERIAL ACCOUNTING II

602-622X-61
602-622X-62

DAY:	Tuesdays 6 - 9 p.m.
FEE:	$100.00
DURATION:	13 lectures (39 hours) beginning week of 6 September & 17 January
PREREQUISITE:	Level I.

This course continues the study of cost accounting and management control systems. Particular topics in cost accounting include budgeting, standard costing, analysis of variance, cost-volume-profit relationships. Under management control systems such topics as responsibility accounting, divisional performance measurement, relevant cost analysis, capital budgeting and decision theory are examined. The roles of decision theory, linear programming, network analysis and simulation are examined as they apply to Managerial Accounting. (Previously called Management Control Systems.)

(18) ACCOUNTING CASE ANALYSIS (A)

602-628X-51

DAY: Mondays 6 - 9 p.m.
FEE: $100.00
DURATION: 13 lectures (39 hours) beginning week of 13 September.
PREREQUISITE: Level I.

The objective of this course is to enable the student to apply his technical knowledge to complex accounting problems faced by the professional accountant. He will be required to interrelate the knowledge obtained from the study of individual subject areas in order to identify problems, analyse data and formulate recommendations for action. Considerable emphasis will be placed on developing the student's ability to communicate results to a client succinctly and coherently.

(19) ACCOUNTING CASE ANALYSIS (B) (Not offered in January 1977)

602-629X-51

DAY: Mondays 6 - 9 p.m.
FEE: $100.00
DURATION: 13 lectures (39 hours) beginning week of 13 September.
PREREQUISITE: Level I.

This course is for those who completed or received credit for Management Control Systems. The course will cover the cost accounting aspects of Managerial Accounting II and a condensed version of Accounting Case Analysis A.

(20) LAW II

602-652X-51
602-652X-81

DAYS: Mondays 6 - 9 p.m.
Thursdays 6 - 9 p.m.
FEE: $100.00
DURATION: 13 lectures (39 hours) beginning week of 13 September & 17 January.
PREREQUISITE: Level I

This course examines the federal and provincial legislation governing corporations, bankruptcy and securities. The rights and responsibilities of the corporation, its shareholders, directors and officers are examined as well as the various requirements for changes to the corporation. The conditions of bankruptcy and insolvency are examined as well as the rights and responsibilities of the participants, particularly the trustee. The requirements of the various security legislations are examined from the point of view of the professional accountant.

LEVEL III

(21) FINANCIAL ACCOUNTING V

603-605X-61

DAY: Tuesdays 6 - 9 p.m.
FEE: $100.00
DURATION: 13 lectures (39 hours) beginning week of 6 September & 17 January.
PREREQUISITE: Level II.

The theory underlying current Canadian accounting practice. Considerable emphasis will be given to the CICA accounting recommendations and exposure drafts, and to the current literature required by the C.A. syllabus. Topics will include: Accounting principles and conventions; financial reporting objectives and requirements; current and long term tangible and intangible assets and liabilities; intercorporate investments, business combinations, consolidations and goodwill; valuation and measurement of income; general price-level and current value accounting; published forecasts and other current developments.

(22) AUDITING III (A) (Offered in Summer 1977 only)

603-634U

This course examines special audit investigations and current auditing developments. Specific topics include: the management audit, prospectus assignments, feasibility studies, business evaluations, fraud and bankruptcy investigations, insurance losses and financial forecasts.

(23) AUDITING III (B) (Offered in January 1977 only)

603-634Y-81

DAY: Thursdays 6 - 9 p.m.
FEE: $100.00
DURATION: 13 lectures (39 hours) beginning week of 17 January.
PREREQUISITE: Level II.

This course is to be taken by those who completed Auditing II prior to the Summer of 1976. A more detailed examination of the material covered in the old Auditing II course will be completed.

(24) COMPUTER SYSTEMS — AUDIT & CONTROL

603-638X-71

DAY: Wednesdays 6 - 9 p.m.
FEE: $100.00
DURATION: 13 lectures (39 hours) beginning week of 6 September & 17 January
PREREQUISITE: Level II

This course explores the changes in internal control and audit procedures required in a computer environment. As well as examining the control over computerized accounting systems, emphasis is placed upon the implementation of management control systems. Control verification procedures are examined as applied during the attest audit, and the use of the computer as an audit tool is explored. The student is expected to develop the expertise to perform the attest audit and to serve as management adviser. (previously called Computers II).

(25) TAXATION II

603-642X-51
603-642X-52

DAY: Mondays 6 - 9 p.m.
FEE: $100.00
DURATION: 13 lectures (39 hours) beginning week of 13 September & 17 January
PREREQUISITE: Level II

Federal corporate taxation; computation of income, taxable income and tax; corporate distributions and reorganizations; deferred compensation; non-residents and international; administration and enforcement. Federal and provincial sales taxes.

COURSE LIST BY EVENING & TIME

MONDAY 6 p.m.

(1) Financial Accounting I
(5) Auditing I
(7) Finance I
(9) Survey of Basic Mathematics
(10) Basic Management Statistics
(11) Economic Analysis of Business
(14) Management Policy
(18) Accounting Case Analysis A
(19) Accounting Case Analysis B (September only)
(25) Taxation II
(20) Law II

TUESDAY 6 p.m.

(2) Financial Accounting II
(6) Taxation I
(7) Finance I
(8) Data Processing & Computers
(11) Economic Environment of the Firm
(21) Financial Accounting V
(17) Managerial Accounting II

WEDNESDAY 6 p.m.

(3) Financial Accounting III
(10) Basic Management Statistics

WEDNESDAY 6 p.m. (CTD.)

(11) Economic Environment of the Firm (John Abbot Campus)
(12) Economic Analysis of Business
(16) Auditing II
(24) Computer Systems — Audit & Control

THURSDAY 6 p.m.

(4) Managerial Accounting I
(7) Finance I
(11) Economic Environment of the Firm
(12) Economic Analysis of Business
(13) Law I
(15) Financial Accounting IV
(23) Auditing III B (January only)

5 COMMUNITY SERVICES

Program Co-ordinator
MRS. J. HOLLANDER
392-4905

INTRODUCTION

Courses offered in this Section of the Calendar come under the headings of Occupational Preparation and Social Work.

LIBRARIES

All students registered in the Community Services Department have full library privileges at McLennan Library upon presentation of their student card of admission.

COURSE INFORMATION

A listing of instructors, textbooks, buildings and room numbers for all courses will be distributed at time of registration. Please ask for a copy.

An evaluation process will be conducted in all courses. Students who do not wish to avail themselves of this opportunity are not obliged to do so.

REGULATIONS AND PROCEDURES

Please see General Information, Section 3.

IT IS THE RESPONSIBILITY OF EACH STUDENT TO READ, UNDERSTAND, AND ABIDE BY THE REGULATIONS AND PROCEDURES PRINTED IN THIS BOOKLET.

OCCUPATIONAL PREPARATION

INTRODUCTION TO DENTAL ASSISTING

640-101Z-61

DAY:	Tuesdays 7 - 9 p.m.
FEE:	$150.00
DURATION:	25 lectures (50 hours) beginning 21 September
PREREQUISITE:	High School Matriculation

This lecture series is introductory in nature and assumes no experience on the part of the student. Students will be taught chairside assisting; some responsibilities for assisting the dental specialist; home care patient education and the proper handling and care of instruments.

MEDICAL SECRETARIES

640-102Z-61
640-102Z-81

DAY:	Tuesdays 6 - 8 p.m. Thursdays 6 - 8 p.m.
FEE:	$125.00
DURATION:	25 lectures (50 hours) beginning 21 September
PREREQUISITE:	Good command of English, especially written form

First hour — basic anatomy and physiology by a qualified medical practitioner. Second hour — medical office practice with emphasis on medical terminology. Considerable homework required.

LEGAL SECRETARIES

640-103X-61

DAY:	Tuesdays 6 - 8 p.m.
FEE:	$60.00
DURATION:	12 lectures (24 hours) beginning 21 September
PREREQUISITE:	High School Matriculation

This course is designed to give secretaries working in law offices and those who wish to work in law offices an understanding and appreciation of some of the basic legal concepts and terminology employed in their office; of basic rules of civil procedure and instruction in the drafting and preparation of basic forms of civil and corporate proceedings employed in a law office.

ADVANCED LEGAL SECRETARIES

640-203Y-61

DAY:	Tuesdays 6 - 8 p.m.
FEE:	$60.00
DURATION:	12 lectures (24 hours) beginning 18 January
PREREQUISITE:	Introductory course or 2 years experience

This course is intended to give Secretaries instruction in the understanding and drafting of more difficult civil and corporate forms and concepts employed in law offices.

SOCIAL WORK

FUNCTIONAL FRENCH FOR SOCIAL WORKERS

646-301X-61

DAY:	Tuesdays 6 - 8 p.m.
FEE:	$60.00
DURATION:	12 lectures (24 hours) beginning 21 September
PREREQUISITE:	Some knowledge of French

The purpose of this course is to facilitate communication between Anglophone social workers and the Francophone community. Instruction will be mainly in the form of discussions on matters pertaining to Social Work practice led by French speaking social workers.

THERAPEUTIC PSYCHODRAMA ADVANCED

646-401X-51

DAY:	Mondays 6 - 8 p.m.
FEE:	$75.00
DURATION:	12 lectures (24 hours) beginning 20 September
PREREQUISITE:	Masters degree in one of the Psycho-Social Sciences relevant to the rendering of mental health services.

This course is designed as a seminar-workshop for professional mental health workers who have had introductory courses and are actively using psychodramatic techniques. The goals of the sessions will be to explore theoretical and technical issues raised by the students for the purpose of developing greater skill and responsibility in using psychodrama procedures.

NOTE: Prospective students who do not meet all the prerequisites are advised to contact the Department.

SEMINAR IN SOCIAL WORK SUPERVISION

646-403X-04

DAY:	Thursdays 12 - 2 p.m.
FEE:	$75.00
DURATION:	12 sessions, beginning 4 November
PREREQUISITE:	P.S.W. engaged in agency supervision

Emphasis of this course will be on the application of concepts relevant to supervision as an administrative and teaching process. Group learning, peer group supervision, consultation, and other supervisory models will be considered. Method will combine lectures, observation of live presentations and/or role playing of supervisory sessions and discussion. Class Limited.

TIMETABLE — COMMUNITY SERVICES

MONDAY		
6:00 — 8:00	646-401X	Advanced Therapeutic Psychodrama
TUESDAY		
6:00 — 8:00	640-102Z	Medical Secretaries
	640-103X	Legal Secretaries
	640-203Y	Advanced Legal Secretaries
	646-301X	Functional French for Social Workers
7:00 — 9:00	640-101Z	Introduction to Dental Assisting
THURSDAY		
12:00 — 2:00	646-403X	Seminar in Social Work Supervision
6:00 — 8:00	640-102Z	Medical Secretaries

6 EDUCATION

Professor R. Boulianne
Associate Director
392-4757

INTRODUCTION

The Education Department of the Centre for Continuing Education offers courses on a part-time basis leading to the Bachelor of Education degree for Certified Teachers (Elementary Level), a Certificate in Second Language Teaching and Diplomas in Educational Administration, Educational Media, Kindergarten Education, Reading Instruction and Special Education. Non-credit courses are also offered.

These programs meet the Provincial standards in regard to the up-grading of teacher classification (Regulation 5). Therefore teachers who register for courses and wish to have them considered for purposes of *scolarité* are advised to apply for admission to one of these programs.

For application forms apply to: 392-8899

The Student Affairs Office
McGill Faculty of Education
P.O. Box 6070, Station A
Montreal, Quebec, H3C 3G1

PROGRAMS

BACHELOR OF EDUCATION (ELEMENTARY EDUCATION)

Candidates enrolled in this 90-credit program must complete course work within the following general pattern:

1) Thirty (30) academic credits in five (5) subject areas relevant to elementary education in a 12-9-3-3-3 pattern (i.e. 12 credits in one subject, 9 credits in a second subject, and 3 credits in each of three other subject areas.) (Academic credit courses are indicated by means of a Ψ)

NOTE: Subject areas, relevant to elementary education, in broad terms, are English, French, History, Geography, Mathematics, General Science, Religion, Art, Music, Physical Education, etc...

2) Fifteen (15) academic credits chosen in consultation with faculty departmental adviser.

3) Fifteen (15) FREE ELECTIVES (courses selected by candidate after consultation with departmental advisor).

4) Thirty (30) credits in a prescribed "education package" as prepared by the Faculty of Education. At the present time, these "packages" are available in Educational Media, Kindergarten, Reading, Second Languages and Special Education.
OR
Fifteen (15) credits as selected by the candidate and fifteen (15) education credits as determined by the Department of Elementary Education.

A transfer of credits may be obtained under the following conditions:

1) Candidates accepted into the program may receive credit for education courses taken previously in the McGill Summer Session or through the Centre for Continuing Education.

2) Thirty (30) credit hours may be transferred from another university with the approval of the Department Chairman and the Associate Director.

Inquiries concerning the program or selection of courses should be addressed to: 392-8832.

Professor Jon Bradley
Senior Adviser B.Ed. (Cert. Teach.)
McGill Faculty of Education
P.O. Box 6070, Station A
Montreal, Quebec, H3C 3G1

CERTIFICATE IN SECOND LANGUAGE TEACHING

The Certificate in Second Language Teaching is a thirty (30) credit program offered to certified teachers who are interested in the teaching of English or French as a second language.

For further information contact the Faculty of Education, Department of Education in Second Languages.

Professor M. Buteau — 392-8863

DIPLOMA PROGRAMS

The Quebec Department of Education upon the recommendation of the Faculty of Education grants the following Diplomas to candidates who successfully complete the required thirty (30) credit program and have teacher certification valid in the Province of Quebec.

Inquiries concerning these programs or the selection of courses in these programs should be directed to the appropriate office in the Faculty of Education.

DIPLOMA IN EDUCATIONAL ADMINISTRATION
Professor R. Townsend — 392-8834

DIPLOMA IN EDUCATIONAL MEDIA
Professor R. Jones — 392-8876

QUEBEC KINDERGARTEN DIPLOMA
Professor R. Duncan — 392-8851

DIPLOMA IN READING INSTRUCTION
Professor F. Greene — 392-8888

DIPLOMA IN SPECIAL EDUCATION
Professor A. Wilkinson — 392-8809
Professor N. McCardell — 392-8809

INFORMATION

REGULATIONS AND PROCEDURES

It is the responsibility of each student to read, understand, and abide by the regulations and procedures printed in this booklet. Please see General Information, Section 3.

REGISTRATION

LOCATION: Strathcona Hall, 772 Sherbrooke St. West, Room 108. Students are encouraged to register for both Fall and Winter Session courses in Education prior to 10 September.

21 June to 27 August	Monday - Thursday 10am - 3pm
7 September to 9 September	Tuesday - Thursday 9am - 8pm
10 September	Friday - 9am - 4:30pm
13 September to 10 December	Monday - Thursday 10am - 3pm
3 January to 6 January	Monday - Thursday 9am - 8pm
7 January	Friday 9am - 4:30pm
31 January to 11 March	Monday - Thursday 10am - 3pm

FEES

Fees for Fall Session courses are payable on the date of registration, but arrangements may be made for payment of Winter Session courses. Personal cheques and money orders are acceptable and should be made payable to McGill University.

Students registered with the Faculty of Education will be required to pay $57.00 of the published fee for a 3 credit course and $114.00 of the published fee for a 6 credit course. **PLEASE READ CAREFULLY THE SECTION CONCERNING WITHDRAWALS AND TRANSFERS FROM COURSES OR COURSE SECTIONS.**

LIBRARIES

Library privileges are available to all students registered in the Education Department of the Centre for Continuing Education in the following Libraries.

1) Education Library
   Faculty of Education
   3700 McTavish Street

2) McLennan Library
   McGill Campus

CURRICULUM LAB

The materials in the Curriculum Lab may be used in the Curriculum Lab but they are not available on a loan bas s for evening students.

GRADING SYSTEMS

Courses are graded either by letter grades or in percent, with the following correspondences: A (80-100%), B (65-79%), C (55-64%), D (45-54%), F (0-44%). Grades A, B, C are termed satisfactory passes, D is a conditional pass, and F is a failure. For further details see Section 3 of the General Information.

SUPPLEMENTAL EXAMINATIONS

It should be noted that supplemental examinations are not necessarily available in all courses and that in fact no supplemental examinations are offered in Art, Music, Second Languages and Reading. It is therefore the student's responsibility to check with the individual instructors to ascertain whether or not supplementals will be available.

If a student fails a course or obtains a conditional pass (45-54%), he may be permitted to sit a supplemental, repeat the course or substitute another course. It should be emphasized that these privileges are within the discretion of the Committee on Admission, Standing and Promotion. If permission is granted, the student must normally clear the failure or conditional pass within 16 months of terminating the original course.

In order to be eligible to write a supplemental examination, the candidate must apply in writing to the Associate Director and attach an examination fee of $15.00.

COURSE INFORMATION

A listing of instructors, textbooks, building and room numbers for all courses will be available by September. Please obtain a copy from the Centre.

An evaluation process will be conducted in all courses. Students who do not wish to avail themselves of this opportunity are not obliged to do so.

EDUCATION CALENDAR

Monday 21 June	Open registration for Fall and Winter courses in Education Programs begins. For further details see registration on page (5).
Monday 13 September	Courses commence in Education Programs
Monday 27 September	Courses commence in Special Education Program
Monday 29 November	Courses commence in Educational Media Program 2nd Term
Monday 6 December	Courses commence in Special Education Program 2nd Term
Thursday 16 December	Final lecture of classes in Education
Monday 10 January	Courses commence in Education Programs

Monday 7 March	Courses commence in Educational Media Program 3rd Term
Monday 14 March	Courses commence in Special Education Program 3rd Term
Thursday 28 April	Final lecture of classes in Education
Thursday 19 May	Final lecture of classes in Educational Media and Special Education Programs

Senate approval is pending for courses designated by a (†).
Unless otherwise indicated courses are held on the McGill Campus.

ACADEMIC COURSES ARE DESIGNATED IN THE COURSE LIST BY A Ψ BEHIND THE COURSE TITLES.

COURSES

ARCHAEOLOGY

Ψ ANCIENT GREEK HISTORY (3 credits)

114-201X51

DAY: Mondays 6 - 8 p.m.
FEE: $70.00
DURATION: 13 weeks (26 hours)
BEGINNING: 13 September

A survey of Ancient Greek History from the origins to the Roman Conquest. The Roman continuation of this course is 114-241Y

Note: Not open to students who have completed 114-201D in the previous years.

Ψ INTRODUCTION TO GREEK MYTHOLOGY (3 credits)

114-203X71

DAY: Wednesdays 6 - 8 p.m.
FEE: $70.00
DURATION: 13 weeks (26 hours)
BEGINNING: 15 September

A survey of the myths and legends of Ancient Greece.

Ψ ANCIENT HISTORY (ROMAN) (3 credits)

114-241Y51

DAY: Mondays 6 - 8 p.m.
FEE: $70.00
DURATION: 13 weeks (26 hours)
BEGINNING: 17 January

A survey of Roman History.

Note: Not open to students who have completed 114-201D in previous years.

Ψ GREEK DRAMA AND THE THEATRE (3 credits)

114-300Y71

DAY: Wednesdays 6 - 8 p.m.
FEE: $70.00
DURATION: 13 weeks (26 hours)
BEGINNING: 19 January

A study of the Greek dramatists, both tragic and comic, in the light of their plays, with special emphasis on the theatrical techniques of the authors and the means of production in the Greek theatre.

RELIGIOUS STUDIES

Ψ RELIGIOUS TRADITIONS OF THE ANCIENT NEAR EAST (3 credits)

260-201X51

DAY: Mondays 6 - 8 p.m.
FEE: $70.00
DURATION: 13 weeks (26 hours and conference)
BEGINNING: 13 September

The religions of ancient Egypt, Mesopotamia and Canaan; a brief consideration of religion in general; its origins, nature and study; a consideration of the geographical, historical and cultural conditions which influenced religious expression, myth and ritual.

Ψ COMPARATIVE RELIGION (PHENOMENOLOGY OF RELIGION) (3 credits)

260-351X71

DAY:	Wednesdays 6 - 8 p.m.
FEE:	$70.00
DURATION:	13 weeks (26 hours and conference)
BEGINNING:	15 September

A cross cultural analysis of a religious motif (to vary each year) and an introduction to the methodological problems of comparing religious phenomena. The Sacred City and the Wilderness; special focus on the "beloved places" of Vaisnavism, the homeland of Buddha, Mecca, Jerusalem and Quebec.

EDUCATIONAL ADMINISTRATION

RESOURCE UTILIZATION IN EDUCATION (3 credits)

411-544X81

DAY:	Thursdays 6 - 9 p.m.
FEE:	$80.00
DURATION:	10 weeks (30 hours)
BEGINNING:	16 September
RESTRICTION:	Open to students in the Diploma in Educational Administration

A focus on the resources available to administrators, finances and the computer in day to day operations will be considered relative to Quebec today.

SCHOOL PERSONNEL PRACTICES (3 credits)

411-552Y81

DAY:	Thursdays 6 - 9 p.m.
FEE:	$80.00
DURATION:	10 weeks (30 hours)
BEGINNING:	20 January
RESTRICTION:	Open to students in the Diploma in Educational Administration

Present personnel practices and procedures relevant to the current Quebec scene. Emphasis on hiring, probation, supervision, dismissal and negotiations for education employees.

COUNSELLOR EDUCATION

Ψ GROUP PROCESSES (3 credits)

412-304X71

DAY:	Wednesdays 7 - 10 p.m.
FEE:	$80.00
DURATION:	10 weeks (30 hours)
BEGINNING:	15 September
RESTRICTION:	Maximum 14 students

This course is intended to make the student familiar with group organization and operation as it relates to the schools. Interpretation of group interaction and typical roles played by members in groups.

SOCIAL FOUNDATIONS OF EDUCATION

Ψ THE EDUCATION OF MINORITIES (3 credits)

† 413-403X71

DAY:	Wednesdays 6 - 9 p.m.
FEE:	$80.00
DURATION:	10 weeks (30 hours)
BEGINNING:	15 September

An examination of the Education of Minorities in Canada (with emphasis on Quebec) in historical and sociological perspectives. Canadian Ethnics, immigrant groups and native peoples will be studied. This course involves a field component.

EDUCATIONAL PSYCHOLOGY AND SOCIOLOGY

Ψ SOCIOLOGY OF EDUCATION — AN OVERVIEW (3 credits)

414-205X71

DAY: Wednesday 6 - 8 p.m.
FEE: $80.00
DURATION: 13 weeks (30 hours)
BEGINNING: 22 September

An introductory course, designed to present students with a broad sociological perspective from which to view education and to provide background for subsequent courses in the sociology of education.

EDUCATION OF EXCEPTIONAL CHILDREN (3 credits)

414-340X81
414-340X82
414-340X83

DAY: Thursdays 6 - 9 p.m.
BEGINNING: 30 September

414-340X64

DAY: Tuesdays 4:30 - 7:30 p.m.
BEGINNING: 28 September
LOCATION: PSBGM — Herbert Symonds
FEE: $80.00
DURATION: 10 weeks (30 hours)

Introduction to the education of exceptional children; characteristics, classification, needs of exceptional children, developmental and corrective programs; areas of current research.

GENERAL METHODS IN SPECIAL EDUCATION (3 credits)

414-341Y81
414-341Y82
414-341Y83

DAY: Thursdays 6 - 9 p.m.
BEGINNING: 9 December

414-341Y64

DAY: Tuesdays 4:30 - 7:30 p.m.
BEGINNING: 7 December
LOCATION: PSBGM — Herbert Symonds
FEE: $80.00
DURATION: 10 weeks (30 hours)

Class organization, teaching methods, assessments of educational level, setting objectives, grouping, individual programming, and reporting.

ORGANIZATION OF SPECIAL EDUCATION PROGRAMS (3 credits)

414-342Y81
414-342Y82
414-342Y83

DAY: Thursdays 6 -9 p.m.
BEGINNING: 17 March

414-342Y64

DAY: Tuesdays 4:30 - 7:30 p.m.
BEGINNING: 15 March
LOCATION: PSBGM — Herbert Symonds
FEE: $80.00
DURATION: 10 weeks (30 hours)

Needs of EMR, slow-learning and emotionally disturbed children; characteristics, school programs, evaluation of progress, integration into the community.

INTRODUCTION TO DIAGNOSIS AND ASSESSMENT (3 credits)

414-343X61
414-343X62
414-343X63

DAY: Tuesdays 6 - 9 p.m.
BEGINNING: 28 September

414-343X84

DAY: Thursdays 4:30 - 7:30 p.m.
BEGINNING: 30 September
LOCATION: PSBGM — Herbert Symonds
FEE: $80.00
DURATION: 10 weeks (30 hours)

Principles and procedures in the evaluation of pupil growth and achievement. Emphasis on the use and interpretation of tests to be given by the class teacher.

PRACTICUM IN DIAGNOSIS AND ASSESSMENT (3 credits)

414-344Y81	DAY:	Thursdays 6 - 9 p.m.
414-344Y82	BEGINNING:	9 December
414-344Y63	DAY:	Tuesdays 6 - 9 p.m.
	BEGINNING:	15 March
414-344Y84	DAY:	Thursdays 4:30 - 7:30 p.m.
	BEGINNING:	17 March
	LOCATION:	PSBGM — Herbert Symonds
	FEE:	$80.00
	DURATION:	10 weeks (30 hours)
	PREREQUISITE:	414-343

A supervised practicum in the use of various tests and measures in learning problems of children; developing prescriptive teaching programs.

Ψ ADOLESCENCE AND THE PROCESS OF EDUCATION (3 credits)

414-377Y61	DAY:	Tuesdays 6 - 8 p.m.
	FEE:	$80.00
	DURATION:	15 weeks (30 hours)
	BEGINNING:	11 January

Development of personality and social behaviour in adolescence. Problems relating to self-concept, academic achievement, relationships with others, and development of values in a changing culture. Some attention to current criticisms of the school as an agency involved in adolescent development.

COGNITIVE AND PSYCHOMOTOR PROBLEMS OF EXCEPTIONAL CHILDREN (3 credits)

414-440X61	DAY:	Tuesdays 6 - 9 p.m.
414-440X62	BEGINNING:	28 September
414-440X83	DAY:	Thursdays 4:30 - 7:30 p.m.
	BEGINNING:	30 September
	LOCATION:	PSBGM — Herbert Symonds
414-440Y61	DAY:	Tuesdays 6 - 9 p.m.
	BEGINNING:	7 December
	FEE:	$80.00
	DURATION:	10 weeks (30 hours)
	PREREQUISITE:	414-341 and 414-342

Teaching methods appropriate to individual and small group instruction to overcome a variety of learning problems. Emphasis on perceptual difficulties.

BEHAVIOURAL PROBLEMS OF EXCEPTIONAL CHILDREN (3 credits)

414-441X81	DAY:	Thursdays 6 - 9 p.m.
414-441X82	BEGINNING:	30 September
414-441Y62	DAY:	Tuesdays 6 - 9 p.m.
	BEGINNING:	15 March
414-441Y61	DAY:	Tuesdays 6 - 9 p.m.
	BEGINNING:	7 December
	LOCATION:	PSBGM — Herbert Symonds
	FEE:	$80.00
	DURATION:	10 weeks (30 hours)

Teaching methods appropriate to the needs of pupils with emotional and behaviour problems. Methods presented will include modification techniques.

PSYCHOLOGY OF LEARNING PROBLEMS (3 credits)

414-442X61
DAY: Tuesdays 4:30 - 7:30 p.m.
BEGINNING: 28 September
LOCATION: PSBGM — Herbert Symonds

414-442Y61
DAY: Tuesdays 6 - 9 p.m.
BEGINNING: 7 December

414-442Y82
DAY: Thursdays 6 - 9 p.m.
BEGINNING: 17 March
FEE: $80.00
DURATION: 10 weeks (30 hours)

The Learning Process: personality development; perceptual dysfunction, behaviour disorders and other handicapping conditions related to learning.

SCHOOL-HOME-COMMUNITY RELATIONS IN SPECIAL EDUCATION (3 credits)

414-443X71
DAY: Wednesdays 6 - 9 p.m.
BEGINNING: 29 September

414-443Y71
DAY: Wednesdays 4:30 - 7:30 p.m.
BEGINNING: 8 December
LOCATION: PSBGM — Herbert Symonds

414-443Y72
DAY: Wednesdays 6 - 9 p.m.
BEGINNING: 16 March
FEE: $80.00
DURATION: 10 weeks (30 hours)

Influence of home and community on the child, teacher-parent interviews, reporting, co-operation with hospital clinics, other professionals, etc.

MATERIALS IN SPECIAL EDUCATION (3 credits)

414-444Y71
414-444Y72
DAY: Wednesdays 6 - 9 p.m.
BEGINNING: 8 December

414-444Y73
DAY: Wednesdays 4:30 - 7:30 p.m.
BEGINNING: 16 March
LOCATION: PSBGM — Herbert Symonds
FEE: $80.00
DURATION: 10 weeks (30 hours)

A critical examination of materials available for special education programs, commercial and teacher-made materials; the application of A-V techniques to Special Education.

VOCATIONAL HABILITATION OF EXCEPTIONAL CHILDREN (3 credits)

414-445Y71
DAY: Wednesdays 6 - 9 p.m.
FEE: $80.00
DURATION: 10 weeks (30 hours)
BEGINNING: 16 March

Vocational requirements of non-academic children, vocational preparation as a responsibility of the special class teacher, placement services, follow-up.

SPECIAL TOPIC: GIFTED (3 credits)

414-446X71
DAY: Wednesdays 6 - 9 p.m.
BEGINNING: 29 September

SPECIAL TOPIC: CULTURALLY DISADVANTAGED (3 credits)

414-446Y71
DAY: Wednesdays 6 - 9 p.m.
BEGINNING: 8 December

SPECIAL TOPIC: INDIVIDUALIZED PROGRAMS (3 credits)

414-446Y72
DAY: Wednesdays 6 - 9 p.m.
BEGINNING: 16 March

SPECIAL TOPIC: BEHAVIOUR MODIFICATION (3 credits)

414-446Y83

DAY:	Thursdays 4:30 - 7:30 p.m.
BEGINNING:	17 March
LOCATION:	PSBGM — Herbert Symonds
FEE:	$80.00
DURATION:	10 weeks (30 hours)

A seminar or workshop approach to selected topics in the field of Special Education. Examples of possible topics include Language Development, Educable Retarded Adolescents, and Behaviour Modification.

Ψ PSYCHOLOGY AND INSTRUCTIONAL DESIGN (3 credits)

414-492X61

DAY:	Tuesdays 6 - 8 p.m.
FEE:	$80.00
DURATION:	13 weeks (30 hours)
BEGINNING:	21 September

This course draws on the fields of learning theory, developmental psychology, and measurement to focus on the tasks of constructing instructional materials. Areas to be considered include behaviour analysis, concept formation, and test construction.

SEMINAR IN SPECIAL TOPICS (3 credits)

414-495Y71

DAY:	Wednesdays 6 - 8 p.m.
FEE:	$80.00
DURATION:	15 weeks (30 hours)
BEGINNING:	12 January

The content of the seminar will vary from year to year and will be announced prior to registration. The seminar may be given by a single instructor or by a group, as the occasion warrants. Permission must be obtained from the department before registration.

CATHOLIC STUDIES

Ψ GOD AND MAN IN DIALOGUE (3 credits)

415-200Y71

DAY:	Wednesdays 6 - 8 p.m.
FEE:	$80.00
DURATION:	15 weeks (30 hours)
BEGINNING:	12 January

An exploration of "Revelation" (especially as conceived by the Second Vatican Council) with particular concern for man's responsibility within the revelational process today.

Ψ A THEOLOGY OF PROCLAMATION (3 credits)

415-391Y71

DAY:	Wednesdays 8 - 10 p.m.
FEE:	$80.00
DURATION:	15 weeks (30 hours)
BEGINNING:	12 January

God chooses to depend on man to realize the divine plan for the growth of his people; man's response and involvement expressed in faith, baptism and basic Christian living to God's offer of fulness of life.

Ψ CHRISTIAN VALUES AND HUMAN ACTION (3 credits)

415-395Y81

DAY:	Thursdays 6 - 8 p.m.
FEE:	$80.00
DURATION:	15 weeks (30 hours)
BEGINNING:	13 January

A philosophical critical inquiry into the relationship between belief and conduct oriented towards the teacher and his role in moral education. Investigation of the ethical nature of the human act and the natural laws as the basis for morality.

PHILOSOPHY OF CATHOLIC EDUCATION (3 credits)

415-398X71

DAY:	Wednesdays 8 - 10 p.m.
FEE:	$80.00

DURATION: 14 weeks (30 hours)
BEGINNING: 15 September

An exploration of the philosophy of Catholic education, and its relevance in the world today.

Ψ ETHICS IN PRACTICE (3 credits)

415-494X71
DAY: Wednesdays 6 - 8 p.m.
FEE: $80.00
DURATION: 14 weeks (30 hours)
BEGINNING: 15 September
PREREQUISITE: 415-395

Fundamental principles of ethics are applied to specific moral issues. The questions investigated are topics which form a part of or are related to the high school religion curriculum, or which are of particular concern to the high school student today; abortion; drugs; protests; education; nuclear war; disarmament and the like.

EDUCATION IN SCIENCE

ECOLOGICAL FEATURES OF OUR NATURAL ENVIRONMENT (3 credits)

417-405X61
DAY: Tuesdays 6:30 - 8:30 p.m.
FEE: $80.00
DURATION: 14 weeks (30 hours)
BEGINNING: 14 September

A lecture, laboratory and field course to train teachers in the principles and practices of field biology and nature tours. The observation and identification of various organisms and a study of their ecological relationships in the web of life. Field trips.

ECOLOGICAL PROBLEMS IN OUR ENVIRONMENT (3 credits)

417-406Y61
DAY: Tuesdays 6:30 - 8:30 p.m.
FEE: $80.00
DURATION: 15 weeks (30 hours)
BEGINNING: 18 January

A modern study of environmental problems for all teachers. The role of man in the web of life in relation to conservation, the population explosion, waste disposal, sewage treatment, air and water pollution, chemical and radiation pollution.

EDUCATION IN ART

Ψ STUDIO ART — DRAWING (3 credits)

426-204X61
DAY: Tuesdays 7 - 10 p.m.
BEGINNING: 5 October

426-204Y61
DAY: Tuesdays 7 - 10 p.m.
BEGINNING: 11 January
FEE: $95.00
DURATION: 10 weeks (30 hours)

Development of sound draughtsmanship; exploration of various forms of graphic expression; various media.

Ψ STUDIO ART — PAINTING (3 credits)

426-205X81
DAY: Thursdays 7 - 10 p.m.
BEGINNING: 7 October

426-205Y81
DAY: Thursdays 7 - 10 p.m.
BEGINNING: 13 January
FEE: $95.00
DURATION: 10 weeks (30 hours)
PREREQUISITE: 426-204

An investigation of media, tools, techniques primarily through studies of natural forms, the human figure.

Ψ GRAPHICS I (3 credits)

426-206X51

DAY: Mondays 7 - 10 p.m.
BEGINNING: 27 September

426-206Y51

DAY: Mondays 7 - 10 p.m.
BEGINNING: 17 January
FEE: $95.00
DURATION: 10 weeks (30 hours)
LIMITED ENROLMENT: 12 students

NOTE: The Monday and Tuesday night graphics classes will be held as workshops. Each student will work at his or her own appropriate level and no student will be permitted to register for more than one level at a time. Priority will be given on Monday nights to Graphics I level students, but, numbers permitting, students at other levels may also join this class. Students at any level may join the Tuesday night workshop up to a maximum of 12 students.

An introduction to some graphic media; monoprints; calligraphy, linocuts, woodcuts, etc. A practical study of the various elementary processes. Exhibition of students' work required at the end of the course.

Ψ GRAPHICS II (3 credits)

426-207X61

DAY: Tuesdays 7 - 10 p.m.
BEGINNING: 28 September

426-207Y61

DAY: Tuesdays 7 - 10 p.m.
BEGINNING: 18 January
FEE: $95.00
DURATION: 10 weeks (30 hours)
LIMITED ENROLMENT: Graphics II, III, IV, V, VI will be a combined workshop with a total of 12 students. See 426-206, NOTE.

A study in further graphic media techniques. These may include line engraving, dry point, relief, etching, intaglio, and related processes. Exhibition of students' work required at the end of the course.

Ψ GRAPHICS III (3 credits)

426-394X61

DAY: Tuesdays 7 - 10 p.m.
BEGINNING: 28 September

426-394Y61

DAY: Tuesdays 7 - 10 p.m.
BEGINNING: 18 January
FEE: $95.00
DURATION: 10 weeks (30 hours)
LIMITED ENROLMENT: Graphics II, III, IV, V, VI will be a combined workshop with a total of 12 students. See 426-206, NOTE.

A continuation in studies of graphic techniques. These may include variations on previous learned techniques, silk screen, viscosity, printing, multiple plate work, etc. Exhibition at the end of the course is required.

Ψ GRAPHICS IV (3 credits)

426-395X61

DAY: Tuesdays 7 - 10 p.m.
BEGINNING: 28 September

426-395Y61

DAY: Tuesdays 7 - 10 p.m.
BEGINNING: 18 January
FEE: $95.00
DURATION: 10 weeks (30 hours)
LIMITED ENROLMENT: Graphics II, III, IV, V, VI will be a combined workshop with a total of 12 students. See 426-206, NOTE.

A more advanced study of various graphic media. The student will be expected to be familiar with the standard processes studied in the preceding courses. At this stage the student should begin to concentrate on developing a personal style, incorporating the necessary techniques to make his personal statement.

Ψ GRAPHICS V (3 credits)

426-494X61	DAY:	Tuesdays 7 - 10 p.m.
	BEGINNING:	28 September
426-494Y61	DAY:	Tuesdays 7 - 10 p.m.
	BEGINNING:	18 January
	FEE:	$95.00
	DURATION:	10 weeks (30 hours)
	LIMITED ENROLMENT:	Graphics II, III, IV, V, VI will be a combined workshop with a total of 12 students. See 426-206, NOTE.

An extension of skills learned in Graphics I-IV. Techniques explored may be engraving, silk screen, relief, intaglio, colligraphy, dry point, combination printing. The student will be expected to explore those areas which most closely correspond to his particular graphics style. An exhibition of students' work is required at the end of the course.

Ψ GRAPHICS VI (3 credits)

426-495X61	DAY:	Tuesdays 7 - 10 p.m.
	BEGINNING:	28 September
426-495Y61	DAY:	Tuesdays 7 - 10 p.m.
	BEGINNING:	18 January
	FEE:	$95.00
	DURATION:	10 weeks (30 hours)
	LIMITED ENROLMENT:	Graphics II, III, IV, V, VI will be a combined workshop with a total of 12 students. See 426-206, NOTE.

A further extension of skills learned in Graphics I-V. The student is expected to have mastered basic graphic skills and be able to work independently. A competent development of personal style experimentation with, and control over the chosen medium is expected.

Ψ INTRODUCTION TO CERAMICS (3 credits)

426-208X61	DAY:	Tuesdays 7 - 10 p.m.
	BEGINNING:	5 October
426-208Y61	DAY:	Tuesdays 7 - 10 p.m.
	BEGINNING:	11 January
	FEE:	$95.00
	DURATION:	10 weeks (30 hours)
	LIMITED ENROLMENT:	12 students

A consciousness of the medium is developed through basic ceramic processes; hand building experiences and introduction to wheel thrown constructions.

Ψ CERAMICS II (3 credits)

426-209X81	DAY:	Thursdays 7 - 10 p.m.
	BEGINNING:	7 October
426-209Y81	DAY:	Thursdays 7 - 10 p.m.
	BEGINNING:	13 January
	FEE:	$95.00
	DURATION:	10 weeks (30 hours)

PREREQUISITE: 426-208
LIMITED ENROLMENT: Ceramics II-IV will be a combined workshop with a total of 12 students.

A continuation and concentration of wheel projects. Elementary clay and glaze preparations.

Ψ CERAMICS III (3 credits)

426-300X81
DAY: Thursdays 7 - 10 p.m.
BEGINNING: 7 October

426-300Y81
DAY: Thursdays 7 - 10 p.m.
BEGINNING: 13 January
FEE: $95.00
DURATION: 10 weeks (30 hours)
PREREQUISITE: 426-209
LIMITED ENROLMENT: Ceramics II-IV will be a combined workshop with a total of 12 students.

Chemistry of glazes, formation of slips, engobes and glaze. Firing and maintenance of kiln equipment.

Ψ CERAMICS IV (3 credits)

426-309X81
DAY: Thursdays 7 - 10 p.m.
BEGINNING: 7 October

426-309Y81
DAY: Thursdays 7 - 10 p.m.
BEGINNING: 13 January
FEE: $95.00
DURATION: 10 weeks (30 hours)
PREREQUISITE: 426-300
LIMITED ENROLMENT: Ceramics II-IV will be a combined workshop with a total of 12 students.

Chemistry of glazes. Emphasis placed on lab work. Firing and maintenance of kiln and equipment.

Ψ BASIC ART MEDIA (3 credits)

426-241X51
DAY: Mondays 7 - 10 p.m.
FEE: $95.00
DURATION: 10 weeks (30 hours)
BEGINNING: 13 September
RESTRICTION: Maximum 20 students Not open to students who have taken 426-296

A course designed for the classroom teacher to develop sensitivity to visual design. A program of experimentation in a variety of art media suitable for application to art in the classrooms of elementary schools.

Ψ BASIC DESIGN (3 credits)

426-296X61
DAY: Tuesdays 7 - 10 p.m.
FEE: $95.00
DURATION: 10 weeks (30 hours)
BEGINNING: 5 October
RESTRICTION: Maximum 20 students

Exploration of the basic elements of visual art through two dimensional compositions and three dimensional constructions. Investigation of materials and tools and the processes of manipulating and relating materials.

Ψ DESIGN II (3 credits)

426-297Y61
DAY: Tuesdays 7 - 10 p.m.
FEE: $95.00

DURATION: 10 weeks (30 hours)
BEGINNING: 1 February
RESTRICTION: Maximum 20 students
PREREQUISITE: 426-296

Further rendering of two and three dimensional compositions (426-296) investigating the potential of basic geometric and organic forms, spatial relationships and environment.

ART CURRICULUM AND INSTRUCTION — EARLY CHILDHOOD (3 credits)

426-322Y51
DAY: Mondays 7 - 10 p.m.
FEE: $95.00
DURATION: 10 weeks (30 hours)
BEGINNING: 10 January
PREREQUISITE: 426-241
RESTRICTION: Maximum 20 students

The philosophy and psychology of child art. The teacher's role in the development of the child's visual awareness and creativity.

EDUCATION IN ENGLISH

READING INSTRUCTION — EARLY CHILDHOOD (3 credits)

427-223X61
DAY: Tuesdays 4:30 - 6:30 p.m.
BEGINNING: 21 September
DURATION: 13 weeks (30 hours)
LOCATION: PSBGM — Van Horne School

427-223X82
DAY: Thursdays 4:30 - 6:30 p.m.
BEGINNING: 23 September
DURATION: 13 weeks (30 hours)
LOCATION: LAKESHORE — John Rennie High School

427-223X73
DAY: Wednesdays 4:30 - 7:30 p.m.
BEGINNING: 22 September
DURATION: 10 weeks (30 hours)
LOCATION: CHATEAUGUAY — Franklin Centre School

427-223Y71
427-223Y72
DAY: Wednesdays 6 - 8 p.m.
BEGINNING: 12 January
DURATION: 15 weeks (30 hours)
FEE: $80.00

Methods and materials for the teaching of reading in the primary grades.

CORRECTIVE READING INSTRUCTION — EARLY CHILDHOOD (3 credits)

427-224X51 Practicum

Instructor's permission required to register. 427-223 prerequisite.

READING INSTRUCTION — LATER CHILDHOOD (3 credits)

427-233X71
427-233X72
427-233X73
DAY: Wednesdays 6 - 8 p.m.
BEGINNING: 15 September
DURATION: 14 weeks (30 hours)

427-233Y71
DAY: Wednesdays 6 - 8 p.m.
BEGINNING: 12 January
DURATION: 15 weeks (30 hours)

427-233Y62
DAY: Tuesdays 4:30 - 6:30 p.m.
BEGINNING: 11 January
DURATION: 15 weeks (30 hours)
LOCATION: PSBGM — Van Horne School

427-233Y83
DAY: Thursdays 4:30 - 6:30 p.m.
BEGINNING: 13 January
DURATION: 15 weeks (30 hours)
LOCATION: LAKESHORE — John Rennie High School

FEE: $80.00

Methods and materials for the teaching of reading in the upper elementary grades.

CORRECTIVE READING INSTRUCTION — LATER CHILDHOOD (3 credits)

427-234X51 Practicum

Instructor's permission required to register. 427-233 prerequisite.

Ψ CHILDREN'S LITERATURE (3 credits)

427-344Y81
427-344Y82
427-344Y83

DAY: Thursdays 6 - 8 p.m.
FEE: $80.00
DURATION: 15 weeks (30 hours)
BEGINNING: 13 January

Selection and use of literature suitable for children in the elementary school.

Ψ LITERATURE FOR YOUNG ADULTS (3 credits)

427-345X81
427-345X82

DAY: Thursdays 6 - 8 p.m.
FEE: $80.00
DURATION: 14 weeks (30 hours)
BEGINNING: 16 September

A study of the strategies of developing reading habits and tastes among high school students. The selection of works in a variety of genres suitable to different abilities and interests will be discussed.

READING INSTRUCTION — HIGH SCHOOL (3 credits)

427-523Y51

DAY: Mondays 5 - 7 p.m.
FEE: $80.00
DURATION: 15 weeks (30 hours)
BEGINNING: 10 January

Methods and materials for the teaching of developmental reading at the high school level.

CORRECTIVE READING INSTRUCTION AT THE HIGH SCHOOL LEVEL (3 credits)

427-577X51 Practicum

Instructor's permission required to register. 427-523 prerequisite.

INTEGRATED LANGUAGE ARTS (3 credits)

427-533X61
427-533X62

DAY: Tuesdays 6 - 8 p.m.
BEGINNING: 14 September
DURATION: 14 weeks (30 hours)

427-533Y61

DAY: Tuesdays 6 - 8 p.m.
BEGINNING: 11 January
DURATION: 15 weeks (30 hours)

427-533Y82

DAY: Thursdays 4:30 - 6:30 p.m.
BEGINNING: 13 January
DURATION: 15 weeks (30 hours)
LOCATION: LAKESHORE — John Rennie High School

427-533Y73

DAY: Wednesdays 4:30 - 7:30 p.m.
BEGINNING: 30 March
DURATION: 10 weeks (30 hours)
LOCATION: CHATEAUGUAY — Franklin Centre School
FEE: $80.00

Methods and materials for integrating reading, listening, writing, speaking aspects of communications instruction.

READING IN THE CONTENT FIELDS (3 credits)

427-576X51
DAY: Mondays 4:30 - 6:30 p.m.
BEGINNING: 13 September
DURATION: 14 weeks (30 hours)

427-576X52
DAY: Mondays 6 - 8 p.m.
BEGINNING: 13 September
DURATION: 14 weeks (30 hours)

427-576X63
DAY: Tuesdays 4:30 - 6:30 p.m.
BEGINNING: 21 September
DURATION: 13 weeks (30 hours)
LOCATION: PSBGM — Van Horne School

427-576X84
DAY: Thursdays 4:30 - 6:30 p.m.
BEGINNING: 23 September
DURATION: 13 weeks (30 hours)
LOCATION: LAKESHORE — John Rennie High School

427-576Y51
427-576Y52
DAY: Mondays 6 - 8 p.m.
BEGINNING: 10 January
DURATION: 15 weeks (30 hours)

427-576Y73
DAY: Wednesdays 4:30 - 7:30 p.m.
BEGINNING: 12 January
DURATION: 10 weeks (30 hours)
LOCATION: CHATEAUGUAY — Franklin Centre School
FEE: $80.00

An exploration of reading instruction in secondary programs in the content fields; survey of remedial and developmental reading instruction throughout the elementary and secondary schools, together with review of research in secondary reading.

Ψ CREATIVE DRAMATICS FOR THE CLASSROOM (3 credits)

427-594X71
DAY: Wednesdays 6 - 8 p.m.
BEGINNING: 15 September
DURATION: 14 weeks (30 hours)
RESTRICTION: Maximum 25 students

427-594Y61
DAY: Tuesdays 4:30 - 6:30 p.m.
BEGINNING: 11 January
DURATION: 15 weeks (30 hours)
LOCATION: PSBGM — Van Horne School
RESTRICTION: Maximum 25 students
FEE: $80.00

A course in Creative Drama and in the use of Improvisional Techniques in the pursuit of child development. Theories of creative drama will be considered, but the emphasis will be on practical activities and exercise.

Ψ IMPROVISATION & THEATRE ARTS FOR THE CLASSROOM (3 credits)

427-595Y71
DAY: Wednesdays 6 - 8 p.m.
FEE: $80.00
DURATION: 15 weeks (30 hours)
BEGINNING: 12 January
PREREQUISITE: 427-594
RESTRICTION: Maximum 25 students

A course beyond the introduction level to provide further perspectives on the teaching of drama and the techniques of improvisation. Instruction and practice in play production will be included.

Ψ BACKGROUND MATHEMATICS FOR ELEMENTARY SCHOOL TEACHERS (3 credits)

428-241X61

DAY: Tuesdays 6 - 8 p.m.
FEE: $80.00
DURATION: 14 weeks (30 hours)
BEGINNING: 14 September

A course specially designed for elementary school teachers to provide the basic foundations, insight and understanding of the Quebec modern elementary mathematics program. Recommended for all elementary school teachers.

Ψ GEOMETRY FOR ELEMENTARY SCHOOL TEACHERS (3 credits)

428-243Y61

DAY: Tuesdays 6:30 - 8:30 p.m.
FEE: $80.00
DURATION: 15 weeks (30 hours)
BEGINNING: 18 January

A course specially designed for elementary school teachers to provide the basic foundations, insight and understanding of the geometry found in the Quebec modern elementary mathematics program.

PERSPECTIVES ON ELEMENTARY MATHEMATICS EDUCATION (3 credits)

428-443Y61

DAY: Tuesdays 6 - 8 p.m.
BEGINNING: 18 January
DURATION: 15 weeks (30 hours)
FEE: $80.00
RESTRICTION: Maximum 20 students

A course to provide a deeper perspective of modern elementary mathematics education through a study of the active learning approach, use of structured materials, modern mathematics projects and research.

Ψ BASIC MUSICIANSHIP FOR CLASSROOM TEACHERS I (3 credits)

429-201X81

DAY: Thursdays 5 - 7 p.m.
BEGINNING: 16 September
DURATION: 14 weeks (30 hours)

429-201Y61

DAY: Tuesdays 5 - 7 p.m.
BEGINNING: 11 January
DURATION: 15 weeks (30 hours)

429-201Y82

DAY: Thursdays 5 - 7 p.m.
BEGINNING: 13 January
DURATION: 15 weeks (30 hours)
FEE: $80.00
RESTRICTION: Maximum 17 students

Introduction to the elements of music theory through techniques of aural training, sight, singing, keyboard and written applications to be presented as the classroom teacher should teach such elements of music to elementary school students.

Ψ UKULELE FOR CLASSROOM TEACHERS (1 credit)

† 429-204X61

DAY: Tuesdays 5 - 6 p.m.
FEE: $57.00
DURATION: 14 weeks (15 hours)
BEGINNING: 14 September
REQUIREMENT: Students must supply their own Ukulele
RESTRICTION: Maximum 20 students

Students need not have any previous experience in music. The objectives of the course are to teach the basic skills of Ukulele playing (picing and strumming), to present ear train-

ing indirectly, to teach the basic concepts of theory, and to increase the enjoyment of music. Musical learning obtained may be transferred to the guitar at a later date.

UKULELE II (non credit)

650-212X61

DAY:	Tuesdays 6 - 7 p.m.
BEGINNING:	14 September
DURATION:	14 weeks (30 hours)
FEE:	$57.00
REQUIREMENT:	Students must supply their own Ukulele.
RESTRICTION:	Maximum 20 students
PREREQUISITE:	429-204

Continuation of Ukulele I. Concentration on the following: picing, fast picing in the classroom, working with minor modes and use of songs with more complicated chord structures.

EDUCATION IN SOCIAL SCIENCES

SIMULATION IN THE SOCIAL SCIENCES (3 credits)

430-403X71

DAY:	Wednesdays 6 - 9 p.m.
BEGINNING:	15 September
DURATION:	14 weeks (30 hours)
FEE:	$80.00
RESTRICTION:	Maximum 25 students

A critical analysis of available simulations as strategies in the social sciences. Emphasis on the elements of simulation, the processes of decision making, and affective learnings. The development of skills in creating, with students, simulations for use in elementary and high school classes.

EDUCATION IN SECOND LANGUAGES

TEACHING ENGLISH AS A SECOND LANGUAGE — SECONDARY SCHOOL (6 credits)

431-558Z51

DAY:	Mondays 6 - 8 p.m.
BEGINNING:	13 September
DURATION:	28 weeks (60 hours)
FEE:	$160.00
RESTRICTION:	Maximum 25 students

Principles of ESL teaching. Objectives and curriculum. Language skills at secondary level; examination and preparation of classroom materials. Lesson planning, training in microteaching situations.

EDUCATIONAL MEDIA

EDUCATIONAL MEDIA I (3 credits)

432-204X61

DAY:	Tuesdays 7 - 10 p.m.
BEGINNING:	14 September

432-204Y61

DAY:	Tuesdays 7 - 10 p.m.
BEGINNING:	30 November
FEE:	$80.00
DURATION:	10 weeks (30 hours)
RESTRICTION:	Maximum 20 students

Application of educational media to the elementary and secondary school teaching and learning situations; rationale and underlying principles, the sources, selection production, effective utilization and evaluation of the media.

FILM PRODUCTION AND FILM CRITICISM (3 credits)

432-205X71

DAY:	Wednesdays 7 - 10 p.m.
BEGINNING:	15 September

432-205Y71

DAY:	Wednesdays 7 - 10 p.m.
BEGINNING:	9 March
FEE:	$95.00

DURATION: 10 weeks (30 hours)
RESTRICTION: Maximum 15 students

A study of the educational significance of various projected media; 16mm films, 8mm films, 35mm slides, multi-media presentation. The utilization of such media, teacher or student production.

PHOTOGRAPHY (3 credits)

432-303X81
DAY: Thursdays 7 - 10 p.m.
BEGINNING: 16 September

432-303Y81
DAY: Thursdays 7 - 10 p.m.
BEGINNING: 2 December
FEE: $95.00
DURATION: 10 weeks (30 hours)
RESTRICTION: Maximum 15 students

This course includes the basic technical and aesthetic components of black and white and colour 35mm photography. The course will consist of lectures, seminars and extensive fieldwork and darkroom sessions.

EDUCATIONAL MEDIA II (3 credits)

432-304Y61
DAY: Tuesdays 7 - 10 p.m.
BEGINNING: 8 March
DURATION: 10 weeks (30 hours)
FEE: $95.00
RESTRICTION: Maximum 20 students
PREREQUISITE: 432-204

This course is intended for the individual with some experience in educational media. Topics include communication theory, implications of learning theory for the media specialist, advanced production techniques and the administration of the media centre.

EDUCATIONAL TELEVISION (3 credits)

432-306Y71
DAY: Wednesdays 7 - 10 p.m.
FEE: $95.00
DURATION: 10 weeks (30 hours)
BEGINNING: 1 December
RESTRICTION: Maximum 15 students

This course will survey the development of ETV with particular reference to current topics including children's TV programs, cable and closed circuit ETV. Short TV productions will take place in class to encourage a critical analysis of the potential of portable TV equipment for local teacher and student production.

LIBRARY-RESOURCE CENTRE (3 credits)

432-309Y71
DAY: Wednesdays 5 - 7 p.m.
FEE: $80.00
DURATION: 15 weeks (30 hours)
BEGINNING: 1 December

The developing of a library-resource centre including such topics as administration, acquisitions, processing, circulation routines, budgeting, and methods of integrating the library-resource centre into the school curriculum.

CONTEMPORARY DEVELOPMENTS IN EDUCATIONAL MEDIA (3 credits)

432-404Y81
DAY: Thursdays 5 - 7 p.m.
FEE: $80.00
DURATION: 15 weeks (30 hours)
BEGINNING: 2 December

An examination of current trends in educational media including a critical analysis of educational television, computer assisted instruction, systems, analysis, programmed instruction, independent learning carrels, gaming and simulation, etc.

INDEPENDENT PROJECT (6 credits)

432-405Z51

DAY: by arrangement with EMC Director
FEE: $160.00
DURATION: 60 hours
BEGINNING: By arrangement with EMC Director
RESTRICTION: Maximum 20 students
PREREQUISITE: 432-204

An intensive media production undertaken by the student after consultation with and the approval of the Director of the Library-Media program.

PHYSICAL EDUCATION

Ψ FOUNDATIONS OF MOVEMENT EDUCATION (3 credits)

434-224Y61

DAY: Tuesdays 6 - 9 p.m.
FEE: $80.00
DURATION: 10 weeks (30 hours)
BEGINNING: 11 January
RESTRICTION: Maximum 25 students

Personal and creative activity in manipulative, non-manipulative and expressive motor activity; the study of basic movement education concepts, principle of movement and the role of movement education in the life of the developing child.

MOVEMENT EDUCATION — CURRICULUM & INSTRUCTION — EARLY CHILDHOOD (3 credits)

434-421X71

DAY: Wednesdays 6 - 9 p.m.
FEE: $80.00
DURATION: 10 weeks (30 hours)
BEGINNING: 14 September

An introduction to content and methodology in early childhood physical education for classroom teachers. The teaching of manipulative, non-manipulative and expressive uses of movement are stressed.

SCIENTIFIC PRINCIPLES OF ATHLETIC TRAINING (3 credits)

434-495Y61

DAY: Tuesdays 6:30 - 9:30 p.m.
FEE: $80.00
DURATION: 10 weeks (30 hours)
BEGINNING: 11 January

Application of physiological and kinesiological principles in the selection, administration and evaluation of athletic conditioning programs; specific topics studied will include circulorespiratory training, intermittent training, isometric training, weight training, calisthenic principles and circuit training methods.

Ψ PHYSICAL EDUCATION FOR EXCEPTIONAL CHILDREN (3 credits)

434-496X61

DAY: Tuesdays 6 - 9 p.m.
FEE: $80.00
DURATION: 10 weeks (30 hours)
BEGINNING: 21 September
RESTRICTION: Maximum 25 students
PREREQUISITE: 434-242 or consent of Instructor, A. E. Wall

Identification, evaluation, and remediation techniques basic to the development of effective physical education programs for educable mentally retarded children and children with specific learning disabilities; Progressive motor learning experiences related to body image, spatial relations, eye-hand coordination, and balance will be developed, applied and evaluated.

PHYSICAL EDUCATION — CURRICULUM & INSTRUCTION — LATER CHILDHOOD (3 credits)

434-431X71

DAY: Wednesdays 4 - 7 p.m.
FEE: $80.00
DURATION: 10 weeks (30 hours)

BEGINNING: 12 January

An introduction to content and methodology in later childhood physical education for classroom teachers. How organization games, gymnastics and dance are stressed.

FACULTY OF LAW

Ψ ENVIRONMENTAL LAW FOR CITIZENS (3 credits)

495-472X61

DAY: Tuesdays 6 - 8 p.m.
FEE: $70.00
DURATION: 13 weeks (26 hours and project)
BEGINNING: 14 September

This course will delve into the basic legal aspects of environmental issues. Federal and provincial statutes, municipal legislation, court system and citizen action will be discussed.

OFF CAMPUS COURSES

A number of other courses will be given in off campus locations. Candidates should direct their inquiries to the appropriate official of their local school board or Professional Association.

Probable locations for courses in the 1976-77 Session will include: Baldwin Cartier, Chateauguay, Cowansville, Gaspé, Hull, Lakeshore, Laval, Lennoxville, MCSC (CECM), North Island, PSBGM, Schefferville-Seven Islands and South Shore.

7 ENGINEERING

Program Co-ordinator
Mrs. Eva St-Pierre
392-4935

INTRODUCTION

The 1976-77 evening program in Engineering offers two Certificate Programs, one in Textile Technology and one in Computer Programming. Graduate level courses leading to an M. Eng., and General interest courses are also offered.

LIBRARIES

All students registered in the Engineering Department have full library privileges at McLennan Library and the Engineering Library upon presentation of their student card of admission.

COURSE INFORMATION

A listing of instructors, textbooks, buildings and room numbers for all courses will be distributed at time of registration. Please ask for a copy.

An evaluation process will be conducted in all courses. Students who do not wish to avail themselves of this opportunity are not obliged to do so.

Candidates who expect to receive a Certificate at Spring Convocation 1977 are required to complete an application form, available at the Centre for Continuing Education. The completed form together with a cheque for $5.00 made payable to McGill University must reach the Centre by 31 March 1977. A late fee of $5.00 will be charged after this date.

REGULATIONS AND PROCEDURES

Please see General Information, Section 3

IT IS THE RESPONSIBILITY OF EACH STUDENT TO READ, UNDERSTAND, AND ABIDE BY THE REGULATIONS AND PROCEDURES PRINTED IN THIS BOOKLET.

GENERAL

MATERIAL HANDLING AND MANAGEMENT

660-001Z-71

DAY:	Wednesdays 6 - 8
FEE:	$95.00
DURATION:	20 lectures (40 hours) beginning 15 September
PREREQUISITE:	High School Graduation

(In co-operation with the Material Handling Society of Montreal)

Characteristics and applications of material handling equipment; hand equipment, pallets and pallet systems, unit loads, powered industrial trucks, conveyors; warehousing, including design and layout, receiving, storing, shipping, stock location systems, order picking, space and inventory control, and public warehousing.

INTRODUCTION TO INDUSTRIAL ENGINEERING

660-002Z-81

DAY:	Thursday 6 - 8 p.m.
FEE:	$95.00
DURATION:	20 lectures (40 hours) beginning 16 September
PREREQUISITE:	High School Graduation

This course is designed to give an appreciation and working knowledge of industrial engineering and manufacturing principles. Specific areas covered include, method study, work simplification, work measurement, assembly line balancing, inventory control and production planning, quality control; maintenance control — procedures, planning, scheduling cost control and budgeting; work sampling, statistical analysis and method, critical path scheduling; labour relations — collective bargaining, conciliation grievance procedures, arbitration; scientific management — motivation.

INDUSTRIAL INSTRUMENTATION

660-003Z-61

DAY:	Tuesday 6 - 8 p.m.
FEE:	$115.00
DURATION:	25 lectures (50 hours) beginning 14 September
PREREQUISITE:	High School Graduation

(In co-operation with the Instrument Society of America, Montreal Chapter)

This introductory course covers industrial process measurements and automatic process control. The first half of the course describes the principles of, and hardware for, taking pressure, level, temperature, flow and analytical measurements, while the second half describes transmission of signals, automatic control theory, final control elements and computer applications.

DESIGN FOR PLASTICS

660-004X-51

DAY:	Mondays 6 - 8 p.m.
FEE:	$50.00
DURATION:	12 lectures (24 hours) beginning 13 September
PREREQUISITE:	High School Graduation

This course will cover essentially the Industrial Designer's approach to plastic design. While not a technical course in the sense of a chemical or physical study of polymers and processes, nor an analytical study of the structures involved, the subject will be treated in adequate technical depth to permit an understanding of the factors governing the application of plastics to their end uses in industrial, commercial and domestic applications.

INDUSTRIAL WATER POLLUTION CONTROL

660-005X-81

DAY:	Thursdays 6 - 9 p.m.
FEE:	$95.00
DURATION:	15 lectures (45 hours) beginning 16 September
PREREQUISITE:	CEGEP Graduation

The following topics will be dealt with in detail: Environmental and Analytical Aspects; Treatment Processes; Industrial Applications. The course emphasizes industrial practise. Examples and problems discussed are based on actual cases, e.g. Oil Refinery Wastewater Treatment plant; API Separator Design, etc.

GRADUATE LEVEL COURSES

AIR POLLUTION

660-502Z-81

DAY:	Thursdays 7:00 - 9:00 p.m.
FEE:	$115.00
DURATION:	25 lectures (50 hours) beginning 16 September
PREREQUISITE:	B.Sc., B. Eng., or Instructor's Permission

This general course in air pollution is designed for personnel of governmental agencies and consulting engineers dealing with environmental control. The history of air pollution, sources, health effects, measurement and control methods, legal aspects, climatological and long-term effects will be discussed.

RELIABILITY ENGINEERING

660-503X-81

DAY:	Thursdays 6 - 9 p.m.
FEE:	$95.00
DURATION:	13 weeks (39 hours) beginning 16 September
PREREQUISITE:	B. Eng.

This course should be of interest to engineers working in the various disciplines of engineering. The Probability theory that would be necessary, as background, will be reviewed in the course. Combinational reliability, reliability models for two or more states and standby systems, failure models, system reliability and its improvement. Fault free analysis.

THE FUNDAMENTALS OF INDUSTRIAL PLANT NOISE CONTROL

660-504X-51

DAY:	Mondays 6 - 8 p.m.
FEE:	$60
DURATION:	12 lectures (24 hours) beginning 13 September
PREREQUISITE:	University Degree

Prolonged exposure to the noise encountered in many industrial plants can result in a permanent hearing loss for those workers involved. Such hearing impairment may be prevented if steps are taken to reduce the noise causing it. The purpose of this course is to provide training for persons involved or likely to be involved in such noise reduction programs.

MASTER OF ENGINEERING COURSES

The Centre for Continuing Education in co-operation with the Department of Electrical Engineering offers the following graduate level courses which can be credited in the program for the Master of Engineering, Power Systems Option. The requirements of the M. Eng., program B, are the successful completion of nine graduate level courses and an engineering project. The pass mark accepted by the Faculty of Graduate Studies and Research is 65% or a grade of "B".

Prospective M. Eng. students seeking further information should contact:

Power Option Coordinator
Department of Electrical Engineering
McGill University
392-5415

COURSE DESCRIPTIONS

APPLICATION PROBLEMS IN POWER SYSTEMS

660-501X-51

DAY:	Mondays and Wednesdays 6 - 8 p.m.
FEE:	$95.00
DURATION:	20 lectures (40 hours) beginning 13 September
PREREQUISITE:	B. Eng., or Equivalent

Subjects covered will include a brief review of synchronous machines, transformers, induction motors, transmission and distribution systems and such equipment as are encountered in utility and industrial plants. Detailed treatment will be given to short-circuit calculations, circuit breaker selections, system and equipment grounding, system overvoltage and overcurrent. Other subjects include thermal overload characteristics of apparatus, unbalanced loads and the effects of harmonics on power systems.

ELECTRIC MACHINE DYNAMICS (SYNCHRONOUS MACHINES)

304-662X-51

DAY:	Mondays and Wednesdays 4 - 6 p.m.
FEE:	$95.00
DURATION:	20 lectures (40 hours) beginning 13 September
PREREQUISITE:	B. Eng., or equivalent

Review of electric machine models. Formulation of nonlinear differential equations. Solutions through numerical integration, constant speed linearization. Models of control elements, loads, prime-movers, voltage regulators, transmission networks. Multimachine power system. Operating point stability. Transient stability analysis. Electromechanical resonance.

CONTROL RECTIFIER CIRCUITS

304-564X-56

DAY:	Mondays and Wednesdays 8 - 10 p.m.
FEE:	$95.00
DURATION:	20 lectures (40 hours) beginning 13 September
PREREQUISITE:	B. Eng., or equivalent

Simple polyphase rectifiers. Thyristor characteristics. Fully and semi-controlled bridges. Interphase transformers. Commutation, regulation and equivalent circuits. Harmonic content. Active loads. Cyclo-converters.

HVAC POWER TRANSMISSION

304-663X-61

DAY:	Tuesdays and Thursdays 6 - 8 p.m.
FEE:	$95.00
DURATION:	20 lectures (40 hours) beginning 14 September
PREREQUISITE:	B. Eng., or Equivalent

Design considerations of EHV and UHV power transmission systems: audible noise, radio interference, environmental aspects of transmission lines. Coordination of system overvoltages with external and internal insulation strengths leading to economic insulation structures based on quantitative evaluation of reliability.

SUBSTATION APPARATUS

304-665X-66

DAY:	Tuesdays and Thursdays 8 - 10 p.m..
FEE:	$95.00
DURATION:	20 lectures (40 hours) beginning 14 September
PREREQUISITE:	B. Eng., or Equivalent

Description and analysis of major apparatus used in modern power systems: circuit breakers, switches, bushings. Electrical connection of substations; principles of equipment selection based on stresses, reliability and economic requirements. Substation protection. Physical arrangement of substations.

HVDC POWER TRANSMISSION

304-664Y-61

DAY:	Tuesdays and Thursdays 6 - 8 p.m.
FEE:	$95.00
DURATION:	20 lectures (40 hours) beginning 18 January
PREREQUISITE:	B. Eng., or Equivalent

Principles of HVDC power, transmission: HVDC transmission circuits, bridge convertor operation, thyristor valve developments, control of HVDC systems, protection of lines and convertor stations, harmonic filtering, modelling techniques for performance studies.

POWER SYSTEM OPERATION

304-666Y-56

DAY:	Mondays and Wednesdays 8 - 10 p.m.
FEE:	$95.00
DURATION:	20 lectures (40 hours) beginning 17 January
PREREQUISITE:	B. Eng., or Equivalent

Power system optimality criteria: economic, environmental, reliability factors. Short and long-term load forecasting; simulation of river flows; economic operations of hydroelectric thermal and hydro-steam systems. Planning of additional equipment by the global and marginal approaches. Siting of new plants. Planning on interconnections; maintenance scheduling.

MODERN TECHNIQUES FOR POWER SYSTEM ANALYSIS

304-667Y-51

DAY:	Mondays and Wednesday 6 - 8 p.m.
FEE:	$120 (includes $25 for computer)
DURATION:	20 lectures (40 hours) beginning 17 January
PREREQUISITE:	B. Eng., or Equivalent

Mathematical descriptions of power systems suitable for computer analysis, and solutions algorithms. Topics will include: matrix algebra, incidence and network matrices, sparse matrix techniques, phase and component representation, short circuit studies, Diakoptics, load flow studies, transient and dynamic stability studies, contingency analysis, state estimation, system identification.

ADVANCES IN SUBSTATIONS AND SUBSTATION EQUIPMENT

660-668Y-66

DAY:	Tuesdays and Thursdays 8 - 10 p.m.
FEE:	$95.00
DURATION:	20 lectures (40 hours) beginning 18 January
PREREQUISITE:	B. Eng., or Equivalent

Derivation of three phase schematic from simple line diagram and development of the schematic into a layout; the method is illustrated using an example.
Description of indoor substation arrangement for medium and high voltages. Metal-clad arrangement and application of SF_6. Description of outdoor substations for high and medium voltages. High voltage DC substations.
Advance protection and control. Examples of protection calculation. Basic requirements of telecommunications and telecontrol board and auxiliary equipment, earthing and secondary wiring problems.
Survey of layouts and comparison of different substations designs and practices in different countries based on a British survey. Future trends in substation development.

TEXTILE TECHNOLOGY

The Centre for Continuing Education in co-operation with the Canadian Association of Textile Colourists and Chemists (CATCC) Quebec Section, and the Department of Chemical Engineering offers courses which lead to the "Certificate of Advanced Technology in Dyeing and Finishing". The aim of the program is to introduce the student to the underlying scientific and engineering principles of textile processing, with particular emphasis on dyeing and finishing.

CERTIFICATE OF ADVANCED TECHNOLOGY IN DYEING AND FINISHING

PROGRAM REQUIREMENTS

Six courses will be offered in all. There will be an examination at the completion of each course and a mark of "C" must be attained in order to qualify for the certificate. Students who successfully complete all six courses will be awarded the McGill Certificate of Advanced Technology in Dyeing and Finishing. These students will also receive a certificate from the CATCC (Quebec Section).

Students entering the program should have completed High School or CATCC's textile courses 101, 102, and 103. Others with several years of relevant industrial experience at the supervisory level are eligible to take these courses.

The six courses which make up the program are:

Engineering Principles
Polymers and Fibres (not offered 1976-77)
Colour Physics and Colour Measurement (not offered 1976-77)
Chemistry of Dyestuffs and Auxiliaries (not offered 1976-77)
Colouration Systems and Physical Chemistry of Dyeing
Testing and Analytical Procedures

Prospective students seeking further information should contact:

Mr. F. Peach
CATCC (Quebec)
Telephone: 878-1581
Local: 455

COURSE DESCRIPTIONS

ENGINEERING PRINCIPLES

662-200X-71

DAY: Wednesdays 6 - 9 p.m.
FEE: $90.00
DURATION: 15 lectures (45 hours) beginning 15 September

Fundamental principles and laws of engineering physics, fluid mechanics, thermodynamics and transfer processes. Application of the laws of conservation of mass and energy to steady and transient processes. Properties of liquids and gases with selected practical examples. Hydrostatics, fluid flow, friction losses, pumping. Properties and strength of materials, stress and strain calculations, safety factors. Selected unit operations and processes of relevance to the class population (e.g. drying, extraction, absorption, etc.). Examples and practical applications of principles covered involving only simple mathematics explained where necessary.

COLOURATION SYSTEMS AND PHYSICAL CHEMISTRY OF DYEING

662-204X-81

DAY: Thursdays 6 - 9 p.m.
FEE: $90
DURATION: 15 lectures (45 hours) beginning 16 September

The course will deal with the physico-chemical principles of applying dyestuffs to textile materials. Rather than learning about what happens in the dyeing process we will understand how and why it happens. The dyer will be able to apply this fundamental knowledge to his daily work and thereby improve it.

TESTING AND ANALYTICAL PROCEDURES

622-205Y-81

DAY: Thursdays 6 - 9 p.m.
FEE: $90
DURATION: 15 lectures (45 hours) beginning 20 January

Instruction and practice will be given in test methods and chemical analysis used in the textile industry. Special emphasis will be given to procedures used in solving dyeing and finishing problems and in the control of dyeing and finishing processes.

COMPUTER PROGRAMMING

McGILL CERTIFICATE IN COMPUTER PROGRAMMING

Effective 1 September 1976 the title of this program will be changed from the McGill Certificate in Computer Languages to the McGill Certificate in Computer Programming. Students who registered prior to 1 September 1976 may complete their program under the old system. New students must comply with the following requirements.

PROGRAM REQUIREMENTS

Students may qualify for a McGill Certificate in Computer Programming by completing 4 core courses and 3 options from those listed below. In order to progress in the Certificate Program at least a "C" must be attained in each course. Students wishing exemptions in equivalent courses must apply in writing, but a minimum of 6 courses must be taken at McGill, a minimum of 5 being in the evening.

Registration is limited to 35 students per class and the course fee contains a laboratory fee for use of the computer and keypunches. All courses involve a considerable amount of practical work. Students usually find it necessary to spend an extra evening at the University in order to complete the computer assignments.

CORE

Introduction to Programming (Fortran I)
Computers in Data Processing I
Computer Structure and Assembly Language Programming
Applications in Fortran (Fortran II)

OPTIONS

* Computers in Data Processing II
PL/1
Computer Systems and Organization
Computing Methods I
Computing Methods II
Mini Computers (Not offered 1976-77)

*Computers in Data Processing II is not available to students who have taken Computers in Data Processing under the old program.

COURSE DESCRIPTIONS

*INTRODUCTION TO PROGRAMMING (FORTRAN I)

664-100X-51
664-100X-81

DAY: Mondays 6 - 8 p.m.
Thursdays 6 - 8 p.m.
FEE: $90.00
DURATION: 12 lectures plus labs (30 hours) beginning week of 20 September
PREREQUISITE: High School Mathematics

Basic computer and programming concepts are taught, including data preparation, the rudiments of the FORTRAN language, flowcharting, problem solving on the computer, and the strategies for performing a number of frequently encountered tasks.

*COMPUTER STRUCTURE AND ASSEMBLY LANGUAGE PROGRAMMING

664-202X-71

DAY: Wednesdays 6 - 8 p.m.
FEE: $90.00
DURATION: 12 lectures plus labs (30 hours) beginning week of 20 September
PREREQUISITE: Introduction to Programming

Computer structure, machine language, instruction execution, addressing techniques and digital representation of data. Symbolic coding and assembly systems, program segmentation and linkage.

PL/1

664-300X-81

DAY: Thursdays 6 - 8 p.m.
FEE: $90.00
DURATION: 12 lectures plus labs (30 hours) beginning week of 20 September
PREREQUISITE: Applications in Fortran or Computers in Data Processing I

The course will be based primarily on the text Programming Language/one by Bates and Douglas. Advantage will however be taken of students previous experience to compare the language features of FORTRAN, COBOL and PL/1.

COMPUTER SYSTEMS AND ORGANIZATION

664-310X-61

DAY: Tuesdays 6 - 8 p.m.
FEE: $90.00
DURATION: 12 lectures plus labs (30 hours) beginning week of 20 September
PREREQUISITE: Assembler

Hardware concepts. Operating system software — resource allocation dispatching, processors, access methods, job control language, batch processing, multiprogramming, multiprocessing, time sharing.

* APPLICATIONS IN FORTRAN (FORTRAN II)

664-200X-51

DAY: Mondays 6 - 8 p.m.
FEE: $90.00
DURATION: 12 lectures plus labs (30 hours) beginning week of 13 September
PREREQUISITE: Introduction to Programming

This course will include Arrays, Subprograms, Data representation and Structures; Numeric and Non-numeric computation.

COMPUTERS IN DATA PROCESSING I

664-201X-51

DAY: Mondays 6 - 8 p.m.
FEE: $90.00
DURATION: 12 lectures plus labs (30 hours) beginning week of 20 September
PREREQUISITE: Introduction to Programming

The course covers the basic concept in COBOL using a structured programming approach and then applies the COBOL concepts to typical data processing problems involved with sequential file handling.

GRADUATE LEVEL

COMPUTING METHODS I

305-507X-61

DAY: Tuesdays 6 - 8 p.m.
FEE: $90.00
DURATION: 12 lectures plus labs (30 hours) beginning week of 20 September
PREREQUISITE: A knowledge of FORTRAN and advanced calculus including matrices

Interpolation, numerical integration, function evaluation, roots of equations of one and several variables, matrices, smoothing and Chebyshev, least square and spline fitting.

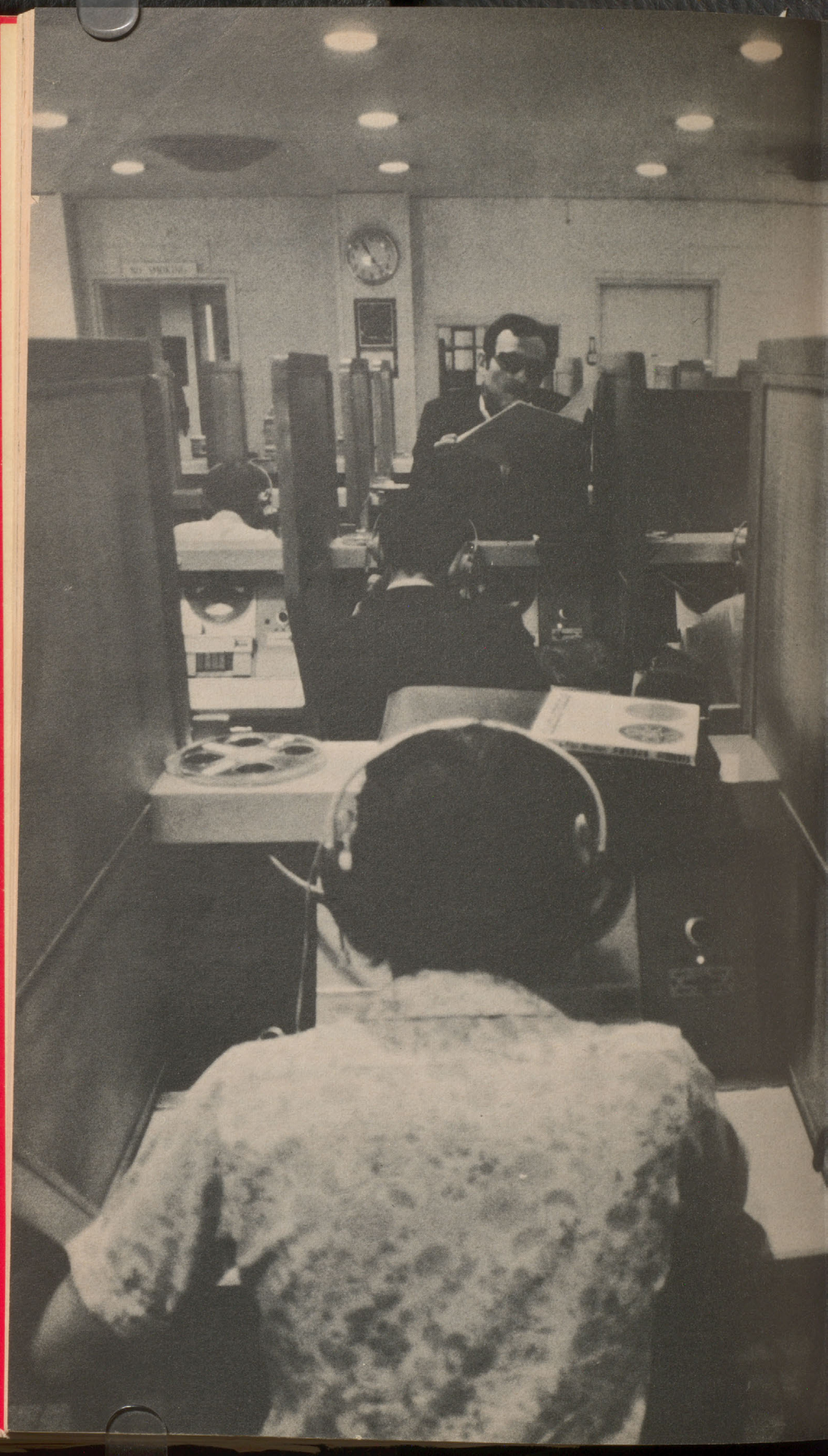
COMPUTING METHODS II

305-608Y-61

DAY:	Tuesdays 6 - 8 p.m.
FEE:	$90.00
DURATION:	12 lectures plus labs (30 hours) beginning week of 17 January
PREREQUISITE:	Computing Methods I

An extension of Computing Methods I. Solutions to ordinary differential equations (predictor-corrector and Runge-Kutta) Monte Carlo methods, linear programming, regression analysis and eigenvalues.

*Courses marked with an asterisk will be repeated in January.



8 LANGUAGES

Professor P. D. Stewart
Associate Director
392-4901

INTRODUCTION

The Centre's Languages Department offers courses leading to the following Certificates of Proficiency and Diploma:

Certificate of Proficiency:

ENGLISH	ITALIAN
FRENCH	RUSSIAN
GERMAN	SPANISH
	TRANSLATION

Diploma: TRANSLATION

Non-certificate courses:

ARABIC	GREEK (MODERN)
CHINESE	HUNGARIAN
CROATOSERBIAN	JAPANESE
	PORTUGUESE

With the exception of Translation courses, all courses offered in the Languages Department are open to any interested person who has the required degree of language competence; there are no academic requirements for admission.

Regulations and Procedures

For Regulations and Procedures concerning Registration dates, Refunds, Transfers, Bookstore, etc., please see Section 3.

At the time of registration, a listing of instructors, textbooks, buildings and room numbers for all courses will be distributed. Please ask for a copy.

IT IS THE RESPONSIBILITY OF EACH STUDENT TO READ, UNDERSTAND AND ABIDE BY THE REGULATIONS AND PROCEDURES PRINTED IN THIS BOOKLET.

PROFESSIONAL CODE — BILL 250
OFFICIAL LANGUAGE ACT — BILL 22.

As of July 1976, all new candidates for a profession are required to have a working knowledge of the French language, that is, they must have the ability to communicate in French both orally and in writing. Those McGill students, enrolled in the professional faculties, who wish to prepare themselves for the provincial government test, should contact Mrs. S. Eldridge at 392-3096 for information concerning the Centre's testing facilities and course offerings.

PROGRAM REQUIREMENTS

Application

Students who expect to receive the Certificate of Proficiency (any language in which it is offered), or the Certificate or Diploma in Translation, are required to apply before 31 March. Applications available at the Centre must be accompanied by $5.00 (cash or money order only) as well as proof of qualification. After 31 March a late fee of $5.00 will be charged.

Certificate of Proficiency in English and French

Candidates for the Certificate of Proficiency in English and in French must complete a total of 270 class-hours if they begin at Level One. The 270 hours consist of forty-five hours at Levels One to Four inclusive plus ninety hours at Level Five. The ninety hour requirement at Level Five includes one oral course and one written course.

Students passing these two Fifth Level courses with a minimum of 75% in each course will be awarded the Certificate of Proficiency.

Students will be exempted from Levels One, Two, Three or Four according to the results of the classification test. The requirement of Level Five must be completed by all candidates for the Certificate.

All five levels of English and French are offered three times each year. Terms begin in September, in January and in May. During the January and May terms, only twice-a-week courses are offered.

Certificate of Proficiency in German, Italian, Russian and Spanish

Candidates for the Certificate of Proficiency in German, Italian, Russian or Spanish must complete a total of 200 class-hours if they begin at Level One.

Students passing the Fourth Level course with a minimum of 75% will be awarded the certificate.

Those who have studied these languages at some other institution may be exempted from one or more levels depending on the progress they have made but must take at least 100 hours at the upper levels at the McGill Centre for Continuing Education.

Certificate of Proficiency and Diploma in Translation

Prerequisite for Admission: A considerable degree of fluency and correctness in both English and French, especially written.

Applicants for admission must take the entrance examination which is held each year in June. Special application forms may be obtained by contacting the Centre in May. The examination fee is $10.00 (non-refundable). Applicants will be notified by mail of their admission which is valid only for the year the examination is taken. No dictionaries are allowed at this examination.

After completing First and Second Year, students will normally elect to specialize in English or in French. The Third and Fourth Year courses include French and English sections.

The Certificate of Proficiency in Translation will be awarded to students who pass the Third Year course with a minimum of 70%. The Certificate of Proficiency is prerequisite to registration in Fourth Year.

The Diploma in Translation will be awarded to students who pass the Fourth Year course with a minimum of 70%.

Students who do not sit a final examination or who are absent from the program for one or more years and wish to be re-admitted must apply in writing to the Committee on Translation Courses before 15 August. Applicants should include their phone numbers. Applications will be judged individually. The decisions of the Committee will be final.

CLASSIFICATION TESTS FOR ENGLISH AND FRENCH COURSES:

All new students must take a classification test before they are allowed to register for courses. Exception will be made if it can be proved that the student has no knowledge of the language. The fee for the test is $5.00 (non-refundable).

A special application form for this test will be found at the end of this announcement. Candidates may also apply in person at the Centre. The completed form, together with the $5.00 fee (cash or money order, no cheques, please) must reach the Centre, at the latest, on the Friday before the test. A receipt will then be sent to the applicant. No applicant will be admitted to the test without this receipt.

Applicants will be notified by mail of the level at which they have been classified a few days after the test. They must then register for courses as soon as possible.

Taking the test will not automatically guarantee a place in a course.

The tests for ENGLISH COURSES will be held on the following dates:

Monday,	9 August 1976, at 7 p.m.
Tuesday,	17 August 1976, at 7 p.m.
Thursday,	19 August 1976, at 7 p.m.
Wednesday,	25 August 1976, at 7 p.m.

The test for FRENCH COURSES will be held on the following dates:

Tuesday,	10 August 1976, at 7 p.m.
Wednesday,	18 August 1976, at 7 p.m.
Monday,	23 August 1976, at 7 p.m.

The location of the test will be given on the receipt form.

EXAMINATIONS

There is an examination at the end of all language courses. It is compulsory for all students who plan to register in the following courses:

The official dates of examinations will be as follows:

All 100-hour courses	week of 4 April
All 50-hour courses	week of 4 April
All 45-hour twice-a-week courses	week of 6 December
All 45-hour once-a-week courses	week of 14 March
Translation courses	April 18 — 29

However, if an instructor is forced to miss a class, the time will be made up at the end of the course, so that the dates above may change in individual cases.

No examination results will be given by telephone; they will be posted in Strathcona Hall three to four weeks after the date of the final examination.

A Report of Standing will be mailed to all students who take an examination.

GRADING SYSTEM

The Centre uses the grading system common to the University, which is as follows:

Percentage Grades: 80 — 100 (A), 65 — 79 (B), 55 — 64 (C), 45 — 54 (D), 0 — 44 (F)
J — Absent, W — Withdrew with Approval, K — Incomplete

Although D is a passing grade, it will not permit entry into a subsequent course for which it is a prerequisite, nor will it be recognized if the course is a requisite of the student's program.

CREDIT

In special circumstances, students registered in a degree program at McGill University may apply to their Faculty for permission to have courses taken in the Centre's Languages Department for credit. Courses of 45 to 50 hours will be counted for 3 credits and courses of 90 to 100 hours will be counted for 6 credits. In the case of withdrawal from a course taken for credit, students must (1) return their Card of Admission to the Centre, and (2) notify their Faculty in writing. Withdrawal will be authorized only if it takes place before the sixth week of the course.

LIBRARY PRIVILEGES

All students registered in the Languages Department have full library privileges at McLennan and Redpath Libraries on presentation of their Student Card of Admission.

ARABIC

FIRST LEVEL, INTENSIVE

681-210Z-61

DAYS:	Tuesdays and Thursdays 6 - 8 p.m.
FEE:	$155.00
DURATION:	100 hours including 25 hours in the laboratory (25 weeks) beginning 21 September

This course, planned for beginners, provides basic instruction in Arabic grammar and the rudiments of reading and writing in classical and modern Arabic, through the audio-visual method.

CHINESE

Classes limited to 25 students

FIRST LEVEL, INTENSIVE

682-210Z-51

DAYS: Mondays and Wednesdays 6 - 8 p.m.
FEE: $155.00
DURATION: 100 hours including 25 hours in the laboratory (25 weeks) beginning 20 September

This course aims to teach the basic structure and the vocabulary of Mandarin Chinese through the audio-visual method. Speaking, reading and writing skills will be equally stressed. By the end of the course students should have gained a mastery of basic grammatical construction for reading and speaking. They should also be able to recognize 400 single and 1200 compound characters.

SECOND LEVEL, INTENSIVE

682-220Z-57

DAYS: Mondays and Wednesdays 8 - 10 p.m.
FEE: $155.00
DURATION: 100 hours including 25 hours in the laboratory (25 weeks) beginning 20 September
PREREQUISITE: A minimum of 50 hours of Chinese

This course offers the student the opportunity to continue the practice of spoken and written Chinese and to attain a greater degree of fluency and correctness in the language.

CROATOSERBIAN

Class limited to 25 students

FIRST LEVEL, INTENSIVE

683-210Z-61

DAYS: Tuesdays and Thursdays 6 - 8 p.m.
FEE: $155.00
DURATION: 100 hours (25 weeks) beginning 21 September

This course is designed to provide students, who have very little or no knowledge of the language, with basic training in Croatoserbian grammar, conversation, reading and writing.

ENGLISH

INTENSIVE COURSES

FEE: $155.00
DURATION: 90 hours (12 weeks)
beginning week of 20 September

REGULAR COURSES

FEE: $90.00
DURATION: 45 hours (twice-a-week courses: 12 weeks)
(once-a-week courses: 23 weeks)
beginning week of 20 September

FIRST LEVEL, INTENSIVE — Class limited to 20 students

684-210X-51

DAYS: Mondays and Wednesdays 6 - 10 p.m.
PREREQUISITE: A mark between 20 and 30 in the Classification Test

This course is designed to cover First and Second Levels in one session. Only students who are classified at First Level but already have a basic knowledge of English will be admitted.

FIRST LEVEL, REGULAR — Classes limited to 20 students

684-211X-51	DAYS:	Mondays and Wednesdays 6 - 8 p.m.
684-211X-57		Mondays and Wednesdays 8 - 10 p.m.
684-211X-61		Tuesdays and Thursdays 6 - 8 p.m.
684-211X-67		Tuesdays and Thursdays 8 - 10 p.m.

SECOND LEVEL, REGULAR — Classes limited to 25 students

684-221X-51	DAYS:	Mondays and Wednesdays 6 - 8 p.m.
684-221X-52		Mondays and Wednesdays 6 - 8 p.m.
684-221X-57		Mondays and Wednesdays 8 - 10 p.m.
684-221X-58		Mondays and Wednesdays 8 - 10 p.m.
684-221X-59		Mondays and Wednesdays 8 - 10 p.m.
684-221X-61		Tuesdays and Thursdays 6 - 8 p.m.
684-221X-62		Tuesdays and Thursdays 6 - 8 p.m.
684-221X-67		Tuesdays and Thursdays 8 - 10 p.m.
684-221X-68		Tuesdays and Thursdays 8 - 10 p.m.

One period per week, ending in March

684-221Z-81	DAYS:	Thursdays 6 - 8 p.m.

THIRD LEVEL, INTENSIVE — Classes limited to 25 students

684-230X-51	DAYS:	Mondays and Wednesdays 6 - 10 p.m.
684-230X-61		Tuesdays and Thursdays 6 - 10 p.m.
	PREREQUISITE:	A mark between 50 and 65 in the Classification Test or a mark of at least 70% in the Second Level

This course is designed to cover Third and Fourth Levels in one session. Only students qualified for Third Level will be admitted.

THIRD LEVEL, REGULAR — Classes limited to 25 students

684-231X-51	DAYS:	Mondays and Wednesdays 6 - 8 p.m.
684-231X-52		Mondays and Wednesdays 6 - 8 p.m.
684-231X-57		Mondays and Wednesdays 8 - 10 p.m.
684-231X-61		Tuesdays and Thursdays 6 - 8 p.m.
684-231X-62		Tuesdays and Thursdays 6 - 8 p.m.
684-231X-67		Tuesdays and Thursdays 8 - 10 p.m.

One period per week, ending in March

684-231Z-67	DAYS:	Tuesdays 8 - 10 p.m.

FOURTH LEVEL, REGULAR — Classes limited to 25 students

684-241X-51	DAYS:	Mondays and Wednesdays 6 - 8 p.m.
684-241X-52		Mondays and Wednesdays 6 - 8 p.m.
684-241X-57		Mondays and Wednesdays 8 - 10 p.m.
684-241X-58		Mondays and Wednesdays 8 - 10 p.m.
684-241X-61		Tuesdays and Thursdays 6 - 8 p.m.
684-241X-62		Tuesdays and Thursdays 6 - 8 p.m.
684-241X-67		Tuesdays and Thursdays 8 - 10 p.m.

One period per week, ending in March

684-241Z-71	DAYS:	Wednesdays 6 - 8 p.m.
684-241Z-87		Thursdays 8 - 10 p.m.

FIFTH LEVEL, REGULAR — Classes limited to 25 students
ATTENDANCE REQUIREMENT: Not less than 2/3 of lectures

Students entering the Fifth Level may choose the course best suited to their needs among the following:

COMPOSITION

684-351X-51	DAYS:	Mondays and Wednesdays 6 - 8 p.m.
684-351X-67		Tuesdays and Thursdays 8 - 10 p.m.

One period per week, ending in March

684-351Z-77 DAYS: Wednesdays 8 - 10 p.m.

The purpose of this course is to encourage students to increase their overall ability in English by acquiring more skill in written expression. The basic principles of composition — unity, coherence and adequate development of the subject matter — will be taught and practised. In addition, paraphrasing, letter and report writing, summarizing and précis writing will be covered.

BUSINESS WRITING

684-352X-57 DAYS: Mondays and Wednesdays 8 - 10 p.m.
684-352X-61 Tuesdays and Thursdays 6 - 8 p.m.

One period per week, ending in March

684-352Z-61 DAYS: Tuesdays 6 - 8 p.m.

This course offers a detailed study of the composition of various types of business letters and includes a review of English grammar and syntax. Business phrases, terminology, idioms and usage are given particular attention. Difficulties experienced by those learning English as a second language are discussed and explained. Students are expected to prepare written assignments which will be corrected and returned.

CONVERSATION

684-353X-51 DAYS: Mondays and Wednesdays 6 - 8 p.m.
684-353X-61 Tuesdays and Thursdays 6 - 8 p.m.
684-353X-57 Mondays and Wednesdays 8 - 10 p.m.

This course is intended for advanced students who want intensive practice in spoken English but feel they still require help with grammar and syntax. Written work will be assigned every week.

LIVING ENGLISH (ORAL)

684-354X-61 DAYS: Tuesdays and Thursdays 6 - 8 p.m.

One period per week, ending in March

684-354Z-67 DAYS: Tuesdays 8 - 10 p.m.

This course is designed to improve vocabulary, pronunciation, idiom and sentence structure. This is achieved by reading texts from modern English and American authors and also scenes from modern plays in order to familiarize students with modern spoken English. Discussing, reading aloud or acting out scenes, dialogues and short stories will provide the opportunity in class for active student participation.

ENGLISH — POST CERTIFICATE COURSES

ADVANCED COMPOSITION

684-361X-61 DAYS: Tuesdays and Thursdays 6 - 8 p.m.
PREREQUISITE: Certificate of Proficiency in English or score of 90% in the Classification Test

This course is designed for those who wish to improve their written communication ability. Building on acquired basic composition skills, the course material and assignments will focus on matters of style and appropriateness of expression.

ADVANCED BUSINESS WRITING

684-361X-51 DAYS: Mondays and Wednesdays 6 - 8 p.m.
PREREQUISITE: Certificate of Proficiency in English or score of 90% in the Classification Test

This course offers training in how to express ideas effectively in business situations. The aim is to increase fluency and to enlarge the vocabulary suitable for use in business communication both written and oral. An important feature of the course is the writing of business letters, memoranda, and reports, which are corrected and returned.

FRENCH

FEE: $90.00
DURATION: 45 hours (twice-a-week courses: 12 weeks)
(once-a-week courses: 23 weeks)
beginning week of 20 September

WITHOUT LABORATORY

FIRST LEVEL (BEGINNERS) — Classes limited to 20 students

686-200X-51	DAYS:	Mondays and Wednesdays 6 - 8 p.m.
686-200X-57		Mondays and Wednesdays 8 - 10 p.m.

WITH LABORATORY

FIRST LEVEL — Classes limited to 20 students

686-210X-51	DAYS:	Mondays and Wednesdays 6 - 8 p.m.
686-210X-67		Tuesdays and Thursdays 8 - 10 p.m.

SECOND LEVEL — Classes limited to 25 students

686-220X-61	DAYS:	Tuesdays and Thursdays 6 - 8 p.m.
686-220X-57		Mondays and Wednesdays 8 - 10 p.m.

THIRD LEVEL — Classes limited to 25 students

686-230X-51	DAYS:	Mondays and Wednesdays 6 - 8 p.m.
686-230X-67		Tuesdays and Thursdays 8 - 10 p.m.

FOURTH LEVEL — Classes limited to 25 students

686-240X-61	DAYS:	Tuesdays and Thursdays 6 - 8 p.m.

WITHOUT LABORATORY

FIRST LEVEL — Classes limited to 20 students

686-211X-51	DAYS:	Mondays and Wednesdays 6 - 8 p.m.
686-211X-52		Mondays and Wednesdays 6 - 8 p.m.
686-211X-57		Mondays and Wednesdays 8 - 10 p.m.
686-211X-58		Mondays and Wednesdays 8 - 10 p.m.
686-211X-61		Tuesdays and Thursdays 6 - 8 p.m.
686-211X-62		Tuesdays and Thursdays 6 - 8 p.m.
686-211X-67		Tuesdays and Thursdays 8 - 10 p.m.
686-211X-68		Tuesdays and Thursdays 8 - 10 p.m.

SECOND LEVEL — Classes limited to 25 students

686-221X-57	DAYS:	Mondays and Wednesdays 8 - 10 p.m.
686-221X-61		Tuesdays and Thursdays 6 - 8 p.m.

One period per week, ending in March

686-221Z-81	DAYS:	Thursdays 6 - 8 p.m.

THIRD LEVEL — Classes limited to 25 students

686-231X-57	DAYS:	Mondays and Wednesdays 8 - 10 p.m.

One period per week, ending in March:

686-231Z-61	DAYS:	Tuesdays 6 - 8 p.m.

FOURTH LEVEL — Classes limited to 25 students

686-241X-51	DAYS:	Mondays and Wednesdays 6 - 8 p.m.

One period per week, ending in March:

686-241Z-67 DAYS: Tuesdays 8 - 10 p.m.

FIFTH LEVEL — Classes limited to 25 students

ATTENDANCE REQUIREMENT: Not less than 2/3 of lectures

Students entering the Fifth Level may choose the course best suited to their needs among the following:

COMPOSITION

686-351X-61 DAYS: Tuesdays and Thursdays 6 - 8 p.m.

One period per week, ending in March:

686-351Z-57 DAYS: Mondays 8 - 10 p.m.

This course consists of exercises in grammar, composition and stylistics. Homework will be assigned each week and discussed in class.

BUSINESS WRITING

686-352X-51 DAYS: Mondays and Wednesdays 6 - 8 p.m.

This course offers a study of various types of business letters and a review of grammar and syntax. Business phrases, terminology, idioms and usage are given special attention. Homework will be assigned each week, corrected and returned.

CONVERSATION

686-353X-51 DAYS: Mondays and Wednesdays 6 - 8 p.m.
686-353X-67 Tuesdays and Thursdays 8 - 10 p.m.

One period per week, ending in March:

686-353Z-77 DAYS: Wednesdays 8 - 10 p.m.

This course is conducted in the form of discussions, debates and short speeches on a variety of subjects. It includes a review of grammar and syntax.

CINEMA AND CONVERSATION

686-355X-61 DAYS: Tuesdays 6 - 9 p.m.
PREREQUISITE: Successful completion of Conversation 686-353

This French conversation course proposes to take as the point of departure for discussion the showing of French films, grouped by theme or director, and introduced briefly by the instructor. Individual students or groups will be expected to prepare oral assignments throughout the course and to take an active part in the discussions.

GERMAN

Counselling: Students who need assistance in deciding the level at which they should register may telephone the Department of German (392-5091 or 5093) between 9 a.m. and 5 p.m. after 1 September.

All classes limited to 25 students

INTENSIVE COURSES

FEE: $155.00
DURATION: 100 hours (25 weeks) beginning week of 20 September

REGULAR COURSES

FEE: $95.00
DURATION: 50 hours (25 weeks) beginning week of 20 September

INTENSIVE PROGRAM (2 years)

FIRST AND SECOND LEVEL (Beginners)

688-210Z-51	DAYS:	Mondays and Wednesdays 6 - 8 p.m.
688-210Z-61		Tuesdays and Thursdays 6 - 8 p.m.
688-210Z-57		Mondays and Wednesdays 8 - 10 p.m.

The direct method will be used in this course. Instruction will be in German from the beginning. With the help of filmstrips and cards the vocabulary will be picked up rapidly. At the end of the course, most students will be able to converse in German, to read a German newspaper and to write in German. Students who complete this course successfully will be able to register in Third Level. One hour a week will be spent in the laboratory.

THIRD AND FOURTH LEVEL

688-230Z-51	DAYS:	Mondays and Wednesdays 6 - 8 p.m.
	PREREQUISITE:	100 hours of German
	ATTENDANCE REQUIREMENT:	Not less than 2/3 of lectures

This course combines the program of the Third and Fourth Level Regular courses. Students who obtain 75% or more in the final examination will receive the Certificate of Proficiency.

REGULAR PROGRAM (4 courses)

FIRST LEVEL (Beginners)

688-211Z-51	DAYS:	Mondays 6 - 8 p.m.
688-211Z-61		Tuesdays 6 - 8 p.m.

This direct method course is designed for students who want to speak and understand everyday German.

SECOND LEVEL

688-221Z-71	DAYS:	Wednesdays 6 - 8 p.m.
	PREREQUISITE:	50 hours of German

This course offers the student the opportunity to continue the practice of spoken and written German and to attain a greater degree of fluency and correctness in the language. Such discussion of grammar and syntax as is found necessary will be given.

THIRD LEVEL

688-231Z-81	DAYS:	Thursdays 6 - 8 p.m.
	PREREQUISITE:	100 hours of German

This course will consist of conversation, composition and some readings of literary texts.

FOURTH LEVEL

688-241Z-51	DAYS:	Mondays 6 - 8 p.m.
	PREREQUISITE:	150 hours of German
	ATTENDANCE REQUIREMENT:	Not less than 2/3 of lectures

This course will consist of conversation, composition and translation.

GREEK (MODERN)

Classes limited to 25 students

FIRST LEVEL

690-211Z-61	DAYS:	Tuesdays 7 - 9 p.m.
690-211Z-81		Thursdays 6 - 8 p.m.
	FEE:	$95.00
	DURATION:	50 hours including 12 hours in the laboratory (25 weeks) beginning week of 20 September

This course is planned for beginners. It will begin with the spoken language and will aim at the acquisition of automatic skills. It will gradually proceed to the written language and will aim at developing the ability to understand and to write a simple composition.

SPOKEN I: UNDERSTANDING AND SPEAKING, ELEMENTARY

690-211X-51

DAYS: Mondays and Wednesdays 5:30 - 7:30 p.m.
FEE: $90.00
DURATION: 45 hours including 11 hours in the laboratory (12 weeks) beginning 20 September
PREREQUISITE: 690-211Z or permission of Professor Farmakides

This course is for students who have already some grounding in elementary grammar and who wish to gain oral practice in the correct use of the language.

HUNGARIAN

HUNGARIAN FOR BEGINNERS

691-211X-51

DAYS: Mondays and Wednesdays 6 - 8 p.m.
FEE: $90.00
DURATION: 45 hours (12 weeks) beginning 20 September

This course is designed to teach essential communication in Hungarian through pronunciation exercises, basic grammar, speaking and reading. Homework will be assigned.

ITALIAN

Counselling: Students who need assistance in deciding the level at which they should register may telephone the Department of Italian (392-4567) between 9 a.m. and 5 p.m. after 1 September.

All classes limited to 25 students

FIRST LEVEL, INTENSIVE

692-210Z-61

DAYS: Tuesdays and Thursdays 6 - 8 p.m.
FEE $155.00
DURATION: 100 hours including 25 hours in the laboratory (25 weeks) beginning 21 September

This course is designed for beginners who wish to acquire a good working knowledge of the language in one year. Students obtaining a good standing in the final examination will be admitted directly to the combined Third and Fourth Levels course. The direct method will be used and instruction will be in Italian from the beginning. Conversation and class discussion will be encouraged. The language laboratory will be used to improve pronunciation, develop aural comprehension and to drill students in basic speech patterns.

REGULAR PROGRAM

FIRST LEVEL

692-211Z-61
692-211Z-81

DAYS: Tuesdays 6 - 8 p.m.
Thursdays 6 - 8 p.m.
FEE: $95.00
DURATION: 50 hours (25 weeks) beginning week of 20 September

A beginner's course using the direct method approach. Special emphasis will be placed on building a practical vocabulary for everyday use through conversation and questions on the readings. Written exercises and oral drills will acquaint students with basic language patterns and grammatical structures.

SECOND LEVEL

692-221Z-71
692-221Z-72

DAYS: Wednesdays 6 - 8 p.m.
Wednesdays 6 - 8 p.m.
FEE: $95.00
DURATION: 50 hours (25 weeks) beginning 22 September
PREREQUISITE: 50 hours of Italian or equivalent

This course is designed to develop fluency and correctness in speaking, reading and writing the language. Italian periodicals and texts, and visual aids will be used to promote class discussion on current events and also on life in modern Italy.

THIRD AND FOURTH LEVELS

692-231Z and 241Z-51

DAYS: Mondays 6 - 8 p.m.
FEE: $95.00
DURATION: 50 hours (25 weeks) beginning 20 September
PREREQUISITE: 100 hours of Italian or equivalent
ATTENDANCE REQUIREMENT: For Fourth Level students: Not less than 2/3 of lectures

This course will be conducted entirely in Italian and will include conversation, readings, composition, and an outline of contemporary Italian civilization. The emphasis will be placed on class discussion of the readings, and of the main features of contemporary Italy. The areas of study will be in alternate years: (1) Italian novels and short stories; (2) Italian plays and cinema. Those who are in their fourth year of Certificate of Proficiency studies are required to study an additional text.

COMMERCIAL ITALIAN

692-352Z — to be offered in 1977-78

JAPANESE

Classes limited to 25 students

FIRST LEVEL, INTENSIVE

694-210Z-61

DAYS: Tuesdays and Thursdays 6 - 8 p.m.
FEE: $155.00
DURATION: 100 hours including 25 hours in the laboratory (25 weeks) beginning 21 September

This course will offer basic training in Japanese grammar, conversation, reading and writing with special emphasis on pronunciation and aural comprehension.

SECOND LEVEL, INTENSIVE

694-220Z-51

DAYS: Mondays and Wednesdays 6 - 8 p.m.
FEE: $155.00
DURATION: 100 hours including 25 hours in the laboratory (25 weeks) beginning 20 September
PREREQUISITE: 100 hours of Japanese or equivalent

This course offers an opportunity to continue the practice of spoken Japanese. It will also emphasize reading and writing (Kana and Kanji) thus enabling the students to attain a higher degree of fluency and correctness in the language.

PORTUGUESE

Counselling: Students who need additional information concerning this course may telephone the Department of Hispanic Studies (392-4600 or 4601) between 9 a.m. and 5 p.m. after 1 September.

Class limited to 25 students

FIRST LEVEL, REGULAR

695-211Z-81

DAYS: Thursdays 6 - 8 p.m.
FEES: $95.00
DURATION: 50 hours (25 weeks) beginning 23 September

In this course, frequent and systematic drill is used to develop rapid response to spoken Portuguese and to enable the student to read quickly.

RUSSIAN

Counselling: Students who need assistance in deciding the level at which they should register may telephone the Department of Russian and Slavic Studies (392-4610 or 4616) between 9 a.m. and 5 p.m. after 1 September.

All classes limited to 25 students

FIRST LEVEL, INTENSIVE

696-210Z-61

DAYS: Tuesdays and Thursdays 6 - 8 p.m.
FEE: $155.00
DURATION: 100 hours including 25 hours in the laboratory (25 weeks) beginning 21 September

In this course the direct method will be used with instruction largely in Russian from the very beginning. The Russian Minimum Word List used at Moscow University will guide the choice of vocabulary. At the end of the course most students will be able to converse easily in Russian, to read a Soviet newspaper and to write straight-forward letters in Russian.

REGULAR PROGRAM

FIRST LEVEL

696-211Z-51

DAYS: Mondays 6 - 8 p.m.
FEE: $95.00
DURATION: 50 hours (25 weeks) beginning 20 September

This course will begin with the general characteristics of the Russian language, the alphabet, the phonetic value of letters, and the basic rules of grammar. It will include reading, oral and written exercises, and a gradual introduction to Russian culture and civilization.

SECOND LEVEL

696-221Z-71

DAYS: Wednesdays 6 - 8 p.m.
FEE: $95.00
DURATION: 50 hours (25 weeks) beginning 22 September
PREREQUISITE: 50 hours of Russian or equivalent

This course consists of grammatical drills and oral exercises, reading and translation of selected texts by modern Soviet Russian authors.

THIRD LEVEL

696-231Z-57

DAYS: Mondays 8 - 10 p.m.
FEE: $95.00
DURATION: 50 hours (25 weeks) beginning 20 September
PREREQUISITE: 100 hours of Russian or equivalent

This course is intended to help students to acquire a greater degree of aural comprehension and fluency in Russian while continuing the review of grammar.

FOURTH LEVEL

696-241Z-61

DAYS: Tuesdays 6 - 8 p.m.
FEE: $95.00
DURATION: 50 hours (25 weeks) beginning 21 September
PREREQUISITE: 150 hours of Russian or equivalent
ATTENDANCE REQUIREMENT: Not less than 2/3 of lectures

This course will be conducted entirely in Russian with emphasis on conversation. Points of grammar and syntax will be explained as the need arises. Discussions will be based in part on readings in Russian civilization and folklore. Those who wish to apply for the Certificate of Proficiency are required to complete additional reading and written work.

SPANISH

Counselling: Students who need assistance in deciding the level at which they should register may telephone the Department of Hispanic Studies (392-4600 or 4601) between 9 a.m. and 5 p.m. after 1 September.

All classes limited to 25 students

REGULAR PROGRAM

FIRST LEVEL

Two periods per week, ending in December:

697-211X-51	DAYS:	Mondays and Wednesdays 6 - 8 p.m.
	FEE:	$90.00
	DURATION:	45 hours (12 weeks) beginning 20 September

One period per week, ending in April:

697-211Z-51	DAYS:	Mondays 6 - 8 p.m.
697-211Z-67		Tuesdays 8 - 10 p.m.
697-211Z-71		Wednesdays 6 - 8 p.m.
697-211Z-87		Thursdays 8 - 10 p.m.
	FEE:	$95.00
	DURATION:	50 hours (25 weeks) beginning week of 20 September

In this course, frequent and systematic drill is used to develop rapid response to spoken Spanish and to enable the student to read quickly. Use of the language laboratory is an integral part of the course.

SECOND LEVEL

697-221Z-51	DAYS:	Mondays 6 - 8 p.m.
697-221Z-71		Wednesdays 6 - 8 p.m.
	FEE:	$95.00
	DURATION:	50 hours (25 weeks) beginning week of 20 September
	PREREQUISITE:	50 hours of Spanish or equivalent

This course will be conducted entirely in Spanish and its aims are to speed up fluency, to achieve correctness of pronunciation, and to give a review of grammatical structures. Oral and written exercises will be given. Readings will be taken from modern Spanish and Spanish-American literature.

THIRD LEVEL

697-231Z-61	DAYS:	Tuesdays 6 - 8 p.m.
	FEE:	$95.00
	DURATION:	50 hours (25 weeks) beginning 21 September
	PREREQUISITE:	100 hours of Spanish or equivalent

This course includes a review of grammar, phonetics, conversation, and cultural material, and will concentrate on readings in Spanish-American literature.

FOURTH LEVEL

697-241Z-61	DAYS:	Tuesdays 6 - 8 p.m.
	FEE:	$95.00
	DURATION:	50 hours (25 weeks) beginning 21 September
	PREREQUISITE:	150 hours of Spanish or equivalent
	ATTENDANCE REQUIREMENT:	Not less than 2/3 of lectures

This course will be similar to Third Level but will be devoted to readings in Spanish literature.

TRANSLATION

All classes limited

FEE: $110.00
DURATION: 50 hours (25 weeks) beginning week of 20 September
ATTENDANCE REQUIREMENT: Not less than 4/5 of all classes held during the year

EVALUATION: The breakdown of the final mark will be as follows: 30% homework, 30% mid-term examination, 40% final examination.

FIRST YEAR — METHODOLOGY AND PRACTICE OF TRANSLATION

698-311Z-51	DAYS:	Mondays 6 - 8 p.m.
698-311Z-52		Mondays 6 - 8 p.m.
698-311Z-61		Tuesdays 6 - 8 p.m.
698-311Z-62		Tuesdays 6 - 8 p.m.
698-311Z-77		Wednesdays 8 - 10 p.m.

This course will consist of one hour of French and one hour of English. It will be an introduction to the basic principles of translation through careful analysis of selected texts and practice work leading to improved skills in both French and English.

SECOND YEAR — TECHNICAL TRANSLATION I

698-321Z-61	DAYS	Tuesdays 6 - 8 p.m.
698-321Z-62		Tuesdays 6 - 8 p.m.
698-321Z-77		Wednesdays 8 - 10 p.m.

As in First Year, this course will consist on one hour of French and one hour of English. The fields covered will be commercial correspondence, banking and finance.

THIRD YEAR — TECHNICAL TRANSLATION II

FRENCH SECTION

698-331Z-71	DAYS:	Wednesdays 6 - 8 p.m.
698-331Z-77		Wednesdays 8 - 10 p.m.

ENGLISH SECTION

698-332Z-81	DAYS:	Thursdays 6 - 8 p.m.

In this course the full period will be devoted to the language of the students' choice. The fields covered will be legal terminology, insurance, advertising and public relations.

FOURTH YEAR — GENERAL AND LITERARY TRANSLATION

PREREQUISITE: Certificate of Proficiency in Translation

FRENCH SECTION

698-341Z-57	DAYS:	Mondays 8 - 10 p.m.
698-341Z-77		Wednesdays 8 - 10 p.m.

ENGLISH SECTION

698-342-77		Wednesdays 8 - 10 p.m.

The material covered will be prose of literary quality ranging from the critical essay to the descriptive or psychological novel. Students will be encouraged to undertake the translation of major contemporary works as personal research projects.

9 LIBERAL ARTS

Program Co-ordinator
Mrs. J. Hollander
392-4905

INTRODUCTION

Courses shown as credit courses are open to all but credit will be given only to students already registered in a degree program. A wide variety of topics is included in this section as follows:

ARCHAEOLOGY
CANADIAN STUDIES
CLASSICS
FINE AND APPLIED ARTS
HUMAN BEHAVIOUR
LITERATURE AND DRAMA
POLITICAL SCIENCE
RELIGIOUS STUDIES
SHORT-TERM COURSES (to be announced)
SPECIAL COURSES FOR WOMEN

An evaluation process will be conducted in all courses. Students who do not wish to avail themselves of this opportunity are not obliged to do so.

COURSE INFORMATION

A listing of instructors, textbooks, buildings and room numbers for all courses will be distributed at time of registration. Please ask for a copy.

LIBRARIES

Library privileges are available to all students registered in Liberal Arts courses at:

McLennan Library
McGill Campus

REGULATIONS and PROCEDURES

Please see General Information, Section 3.

IT IS THE RESPONSIBILITY OF EACH STUDENT TO READ, UNDERSTAND AND ABIDE BY THE REGULATIONS AND PROCEDURES PRINTED IN THIS BOOKLET.

*Asterisk indicates course will be repeated in January.

ARE YOU INTERESTED IN RECEIVING NOTICES OF SPECIAL SHORT-TERM COURSES THAT WILL BE OFFERED DURING THE COMING YEAR? SEND YOUR NAME AND ADDRESS TO:

CENTRE FOR CONTINUING EDUCATION
772 SHERBROOKE STREET WEST, ROOM 206
MONTREAL, QUEBEC H3A 1G1

ARCHAEOLOGY

(1) BIBLICAL ARCHAEOLOGY

670-211X-61

DAY:	Tuesdays 6 - 8 p.m.
FEE:	$60.00
DURATION:	13 lectures (26 hours) beginning 14 September

This course will introduce Biblical Archaeology in the environment of the Ancient Near East. The civilization of Palestine from the Natufians of 7000 B.C. to the time of Jesus will be surveyed. The 13 lectures, illustrated with colour slides, will tie together the history of early Israel in the light of new discoveries in archaeology and new understandings of the ancient literature. Of interest to travellers.

(2) SUMER — THE WORLD'S FIRST CIVILIZATION

670-212Y-61

DAY: Tuesdays 6 - 8 p.m.
FEE: $60.00
DURATION: 13 lectures (26 hours) beginning 11 January

Urban civilization began with the dynamic Sumerians in southeastern Mesopotamia. This course will introduce this fascinating people — their thriving business, literature, art, architecture and social institutions. Students will learn some cuneiform from the world's earliest written texts. The lectures will be illustrated with colour slides. Of interest to travellers.

(3)ANCIENT EGYPT

670-221X-71

DAY: Wednesdays 6 - 8 p.m.
FEE: $60.00
DURATION: 13 lectures (2 hours) beginning 15 September

The fascinating story of the ancient Egyptians. This course will trace the history, art, architecture and literature of Egypt from prehistoric times through the New Kingdom. It will encourage a fresh look at source materials as well as recently discovered archaeological data.

(4) THE HITTITES, THE ASSYRIANS AND THE PERSIANS

670-222Y-71

DAY: Wednesdays 6 - 8 p.m.
FEE: $60.00
DURATION: 13 lectures (2 hours) beginning 12 January

The Hittite, Assyrian and Persian civilizations produced precedental milestones in the story of human self-realization. This course will study these later ancient civilizations of Northern Mesopotamia from their prehistoric beginnings through their rise and fall as major powers of the Ancient Near East. Their art, architecture and literature will be examined in archaeological and historical context.

CANADIAN STUDIES

(5) CANADIAN ART HISTORY

674-100X-61

DAY: Tuesdays 6 - 8 p.m.
FEE: $65.00
DURATION: 13 lectures (26 hours) beginning 14 September

An environmental approach to the study of Canadian painting, sculpture, architecture and the decorative arts. Special emphasis on the influences of geography, history and settlement patterns. A study of the Canadian work of art with comparisons and contrasts to American and European works of the same period.

(6) CONTEMPORARY CANADIAN ART

674-102Y-61

DAY: Tuesdays 6 - 8 p.m.
FEE: $65.00
DURATION: 13 lectures (26 hours) beginning 11 January

A study of the Canadian Art scene from Borduas to the present time. This course will include discussion of painting, sculpture, graphic arts with some comparisons with the art of other countries important in today's movements and "schools" of art.

(7) ESKIMO AND NORTH AMERICAN INDIAN ART

674-103X-76

DAY: Wednesdays 8 - 10 p.m.
FEE: $65.00
DURATION: 13 lectures (26 hours) beginning 15 September

A study of the many art forms of the Eskimo and North American Indian from earliest discovery to the present time. Comparisons will be made with the art of other cultures considering social, historical and geographical influences.

(8) ANTHROPOLOGY — CANADA'S NATIVE PEOPLES

674-400X-51

DAY: Mondays 6 - 8 p.m.
FEE: $60.00
DURATION: 13 lectures (26 hours) beginning 13 September

A study of the Canadian Eskimo and Indian cultures. This course will try to place the contemporary problems of Canada's indigenous peoples in their historical context.

(9) HISTORY — CANADA TO 1867

674-500X-61

DAY: Tuesdays 6 - 8 p.m.
FEE: $60.00
DURATION: 13 lectures (26 hours) beginning 14 September

A survey of the economic, political, military and social development of Canada from the pre-Columbian discoveries to Confederation. Particular attention will be given to the growth of French-Canadian institutions, the fur trade, the emergence of English-Canada, Maritime particularism, French-English relations and political tensions of the early nineteenth century.

(10) HISTORY — CANADA SINCE 1867

674-501Y-61

DAY: Tuesdays 6 - 8 p.m.
FEE: $60.00
DURATION: 13 lectures (26 hours) beginning 11 January

A historical survey of contemporary Canada with special reference to Western expansion, Maritime development, Canadian-American relations, Quebec society, and Canada in two world wars. The development of modern political parties will be examined as well as the impact of urbanization and economic change.

(11) MONTREAL — AUJOURD'HUI ET HIER

674-504X-51

DAY: Mondays 6 - 8 p.m.
FEE: $85.00
DURATION: 14 lectures (28 hours) plus one 3 hour Saturday morning city tour beginning 13 September
PREREQUISITE:: Bilingualism

This course will study the geography, history, culture, civic administration and artistic aspects of our city. The teaching will be done by several lecturers according to his field of expertise and each in his own language — French or English. Fee includes Saturday morning bus tour of the city on a date to be arranged during the term.

(12) CANADIAN ECONOMIC GEOGRAPHY

674-505Y-56

DAY: Mondays 8 - 10 p.m.
FEE: $65.00
DURATION: 13 lectures (26 hours) beginning 10 January

This course is concerned with the historical, political and physical factors associated with the economic geography of Canada. Landforms and climate, export staples will be studied. The emergence of a national core-periphery structure will be dealt with as well as the roles of transportation, industrialization and urbanization in the development of the Canadian economy.

(13) ENVIRONMENTAL LAW FOR CITIZENS (3 credits)

495-472X-61

DAY: Tuesdays 6 - 8 p.m.
FEE: $65.00
DURATION: 13 lectures (26 hours plus individual work assignment/projects) beginning 14 September

This course will delve into the basic legal aspects of environmental issues. Federal and provincial statutes, municipal legislation, court system and citizen action will be discussed.

CLASSICS — LITERATURE, HISTORY AND DRAMA

(14) INTRODUCTION TO GREEK MYTHOLOGY (3 credits)

114-203X-71

DAY: Wednesdays 6 - 8 p.m.
plus modular instructional periods
FEE: $65.00
DURATION: 13 weeks (26 hours) beginning 15 September

The Gods and Heroes of the Greeks. This course will consider the origins, formation and transmission of the Greek myths. It will examine the more important myths as they appear in literary sources (Homer, Hesiod and the dramatists) and as they are represented in Greek art. Some attention will also be paid to the more common themes of Greek myth, as well as to the cultural values and religious attitudes which they reflect.

(15) GREEK DRAMA AND THEATRE (3 credits)

114-300Y-71

DAY: Wednesdays 6 - 8 p.m.
plus modular instructional periods
FEE: $65.00
DURATION: 13 weeks (26 hours) beginning 19 January

A study of the Greek dramatists, both tragic and comic, in the light of their plays, with special emphasis on the theatrical techniques of the authors and the means of production in the Greek theatre.

(16) ANCIENT GREEK HISTORY (3 credits)

114-201X-51

DAY: Mondays 6 - 8 p.m.
plus modular instructional periods
FEE: $65.00
DURATION: 13 weeks (26 hours) beginning 13 September

An introductory survey of Greek history from its origins to the Roman conquest of the eastern Mediterranean. Lectures will cover the political development of the Greek city states in the archaic period, the Persian Wars, the rise of Athens and its fall in the Peloponnesian War, and the expansion of Greek civilization by Alexander.

(17) ANCIENT HISTORY (ROMAN) (3 credits)

114-241Y-51

DAY: Mondays 6 - 8 p.m.
plus modular instructional periods
FEE: $65.00
DURATION: 13 weeks (26 hours) beginning 17 January

An introductory survey of Roman history from its origins to the reign of Constantine. Lectures will cover the political development of the Roman constitution through the period of the kings, and republic and its collapse, the principate and its transformation into the dominate of Diocletian and Constantine. The expansion of Rome in Italy and the Mediterranean is treated with its effects on European culture.

FINE AND APPLIED ARTS

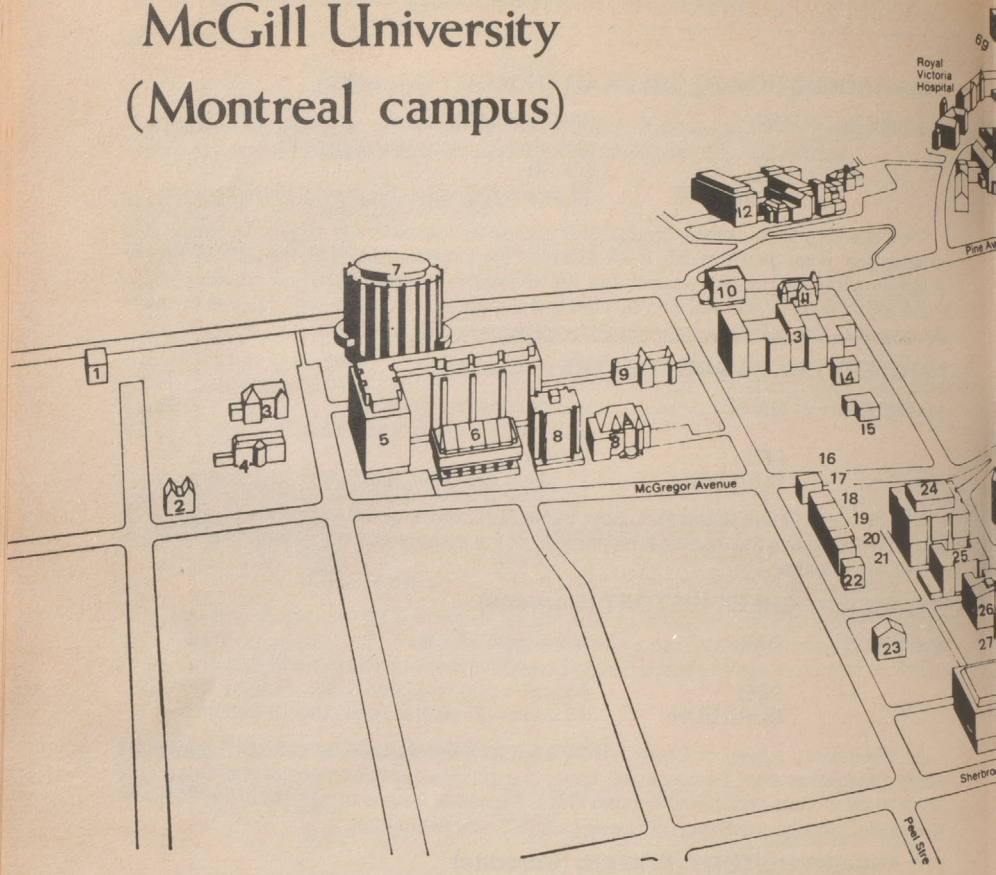
(18) EARLY RENAISSANCE ART IN ITALY

670-101X-51

DAY: Mondays 7 - 9 p.m.
FEE: $60.00
DURATION: 13 lectures (26 hours) beginning 13 September

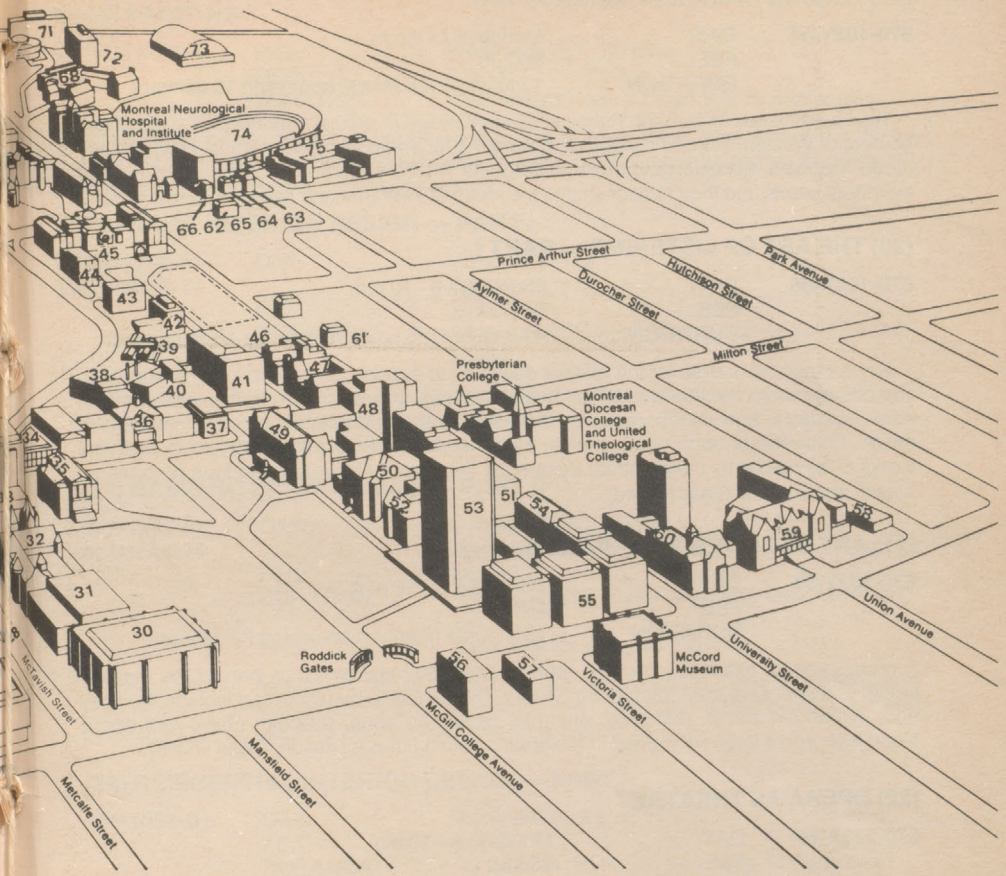
The dramatic emergence of a new concept of art in Italy during the 15th Century is one of the most important turning points in modern history. This course will aim primarily towards a deeper insight into works of the most important artists, i.e. Masaccio, Donatello, Mantegna, Piero della Fransesca etc. Special consideration will be given to the relationship of the visual arts to the classical tradition and to the literature, philosophy and social conditions of the 15th Century.

McGill University
(Montreal campus)



Numerical Key

1 Beatty Hall
2 Martlet House
3 Davis House
4 Hosmer House
5 Stewart Biological Sciences
6 Greenhouses
7 McIntyre Medical Sciences
8 Chancellor Day Hall
9 Mental Hygiene Institute
10 Purvis Hall
11 Duggan House
12 Allan Memorial Institute
13 Faculty of Education
14 Hugessen House
15 David Thomson House
16 3511 Peel Street
17 3495/91 Peel Street
18 3487 Peel Street
19 3483 Peel Street
20 3479 Peel Street
21 3475 Peel Street
22 3465 Peel Street
23 3437 Peel Street
24 University Centre
25 Peterson Hall
26 Faculty Club
27 3438 McTavish Street
28 3434 McTavish Street
29 Samuel Bronfman Bldg.
30 McLennan Library
31 Redpath Library
32 Redpath Hall
33 Morrice Hall
34 Stephen Leacock Bldg.
35 Redpath Museum
36 Arts Bldg.
37 Dawson Hall
38 840 McGregor
39 Old Greenhouse
40 Stationery Stores
41 F. Cyril James Bldg.
42 Foster Radiation Laboratory
43 Eaton Electronics Laboratory
44 Donner Bldg.
45 Strathcona Anatomy & Dentistry Bldg.
46 William & Henry Birks Bldg.
47 Wilson Hall
48 McConnell Engineering Bldg.
49 Macdonald Engineering Bldg.
50 Macdonald Chemistry Bldg.
51 Frank Dawson Adams Bldg.
52 Macdonald Physics Bldg.
53 Burnside Hall
54 Pulp & Paper Institute
55 Otto Maass Chemistry Bldg.
56 Strathcona Hall
57 762 Sherbrooke Street W.
58 Women's Athletics
59 Strathcona Music Bldg.
60 Royal Victoria College
61 3521 University Street
62 522 Pine Ave. W.
63 505 Pine Ave. W.
64 509 Pine Ave. W.
65 515/517 Pine Ave. W.
66 527 Pine Ave. W.
67 Pathology Bldg.
68 Douglas Hall
69 Gardner Hall
70 Bishop Mountain Hall
71 Molson Hall
72 McConnell Hall
73 McConnell Winter Stadium
74 Molson Stadium
75 Sir Arthur Currie Memorial Gymnasium



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(19) ITALIAN HIGH RENAISSANCE ART

670-102Y-51

DAY: Mondays 7 - 9 p.m.
FEE: $60.00
DURATION: 13 lectures (26 hours) beginning 10 January

The few decades of the High Renaissance in Italy are of crucial importance for the development of Western Art and civilization during the following centuries. Artists such as Leonardo, Raphael, Michelangelo, Titian, Giorgione will be analyzed and discussed — their individual merits and their relationship to the ideas of their time and twentieth century man.

(20) THE ART OF LISTENING — PART I

670-106X-86

DAY: Thursdays 8 - 10 p.m.
FEE: $60.00
DURATION: 13 lectures (26 hours) beginning 16 September

A non-technical course for the listener designed to expand his perception and appreciation of music from the Baroque to the Twentieth Century, and to develop his awareness of those structural and stylistic aspects important in the understanding and enjoyment of music. Emphasis is upon non-technical analysis, relevant currents in the sister arts and works to be played by the Montreal Symphony Orchestra. Illustrated with tape recordings, slides, instruments. Class limited.

(21) ART OF LISTENING — PART II

670-107Y-86

DAY: Thursdays 8 - 10 p.m.
FEE: $60.00
DURATION: 13 lectures (2 hours) beginning 27 January

A more in-depth examination of the musical and non-musical forces behind the masterworks of composers from Bach to Stravinsky. New areas to be discussed include the prelude, symphonic poem, rhapsody, chamber music, art song, program music and opera along with works to be performed in Montreal's coming music season. Class limited.

(22) OPERA AS THEATRE

670-223X-56

DAY: Mondays 8 - 10 p.m.
FEE: $65.00
DURATION: 13 lectures (2 hours) beginning 14 September

In this course opera will be treated as a theatrical event. Its development will be studied from its beginnings to the twentieth century. Excerpts of representative operas will be heard. Consideration will be given also to the problems of staging.

(23) INTRODUCTION TO STUDIO ART

671-100X-51

DAY: Mondays 7 - 10 p.m.
FEE: $75.00
DURATION: 13 weeks (39 hours) beginning 13 September

An introduction to the basic studio skills of drawing, painting, sculpture. This course also includes slides and films of works of art and of artists at work for group discussion. It offers the opportunity to gain a basic appreciation of art through a practical approach. Students will provide their own materials. Class Limited.

(24) DRAWING

***671-101X-61**
671-101Y-51

DAY: Tuesdays 7 - 10 p.m. or
Mondays 7 - 10 p.m. January only
FEE: $75.00
DURATION: 13 weeks (39 hours) beginning 14 September

This drawing class is for both beginners and intermediates. It will explore the fundamentals of graphic expression using various media, including charcoal, pencil, pen and ink, conté crayon. Students will provide their own materials. Class limited.

(25) PAINTING

*671-102X-71	DAY:	Wednesdays 7 - 10 p.m.
	FEE:	$75.00
	DURATION:	13 weeks (39 hours) beginning 15 September

This introductory painting class will emphasize individual development in colour theory and pictorial expression. Students will paint from still life, life and imagination. Students will provide their own materials. Class limited.

(26) BASIC INTERIOR DESIGN — PART I

671-103X-51	DAY:	Mondays 6 - 8 p.m. or
671-103X-71		Wednesdays 6 - 8 p.m.
	FEE:	$65.00
	DURATION:	13 lectures (26 hours) beginning week of 13 September

Students will learn to plan an entire project including the establishment of a critical path, the planning of a house and each individual area of the house. There will be practical exercises in order to learn how to compile a portfolio.

(27) BASIC INTERIOR DESIGN — PART II

671-104Y-51	DAYS:	Mondays 6 - 8 p.m. or
671-104Y-71		Wednesdays 6 - 8 p.m.
	FEE:	$65.00
	DURATION:	13 lectures (26 hours) beginning week of 10 January
	PREREQUISITE:	Basic Interior Design— Part I

The subject of the second half of this course will be: Materials, Colours, Lighting and Furniture. The general method of presentation for Part I and Part II will be audio-visual and the student will be asked to work on some practical exercises.

(28) RESIDENTIAL INTERIOR DESIGN — PART I

671-105X-61	DAY:	Tuesdays 6 - 8 p.m.
	FEE:	$65.00
	DURATION:	13 lectures (26 hours) beginning 14 September
	PREREQUISITE:	Basic Interior Design — Part I and Part II or equivalent

A practical course for people working in, or intending to work in, Interior Design or related design fields. Included will be: creating a design concept, measuring, room maps, elementary perspective, architectural effects, floor coverings, furniture arrangements, mirrors, painting and papering, and what a home does for and to its people.

(29) RESIDENTIAL INTERIOR DESIGN — PART II

671-106Y-61	DAY:	Tuesdays 6 - 8 p.m.
	FEE:	$65.00
	DURATION:	13 lectures (26 hours) beginning 11 January
	PREREQUISITE:	Residential Interior Design — Part I or equivalent

This part of the course will cover: understanding and using lighting and wiring, colour and pattern, window treatments, use of art works and decorations, scheduling and budgeting, and helping homeowners.

(30) CREATIVE WRITING

*671-200X-61	DAY:	Tuesdays 6 - 8 p.m.
	FEE:	$60.00
	DURATION:	13 classes (26 hours) beginning 14 September

A course designed to aid the student with the type of writing he/she chooses, as well as giving an overview of various forms: short story, novel, play etc. techniques, style, setting, character, description, dialogue, atmosphere, plot etc. will be covered in a situation of total

student participation. Class limited. If there are sufficient registrations in September, a Section will be opened on Thursdays 6:30 - 8:30 p.m. AFTER filling the Tuesday class. First come — first served.

(31) WRITING FOR FILMS

671-201Z-81

DAY: Thursdays 6 - 8 p.m.
FEE: $110.00
DURATION: 26 lectures (52 hours) beginning 16 September

An introduction to the writing of screen plays for feature films, including the development of ideas through synopsis and treatment stages up to final shooting script. Where and how to send completed scripts will be explored.

(32) THEATRE, TELEVISION, FILM: DIRECTING AND PRODUCING

671-203Z-56

DAY: Mondays 8 - 10 p.m.
FEE: $110.00
DURATION: 26 lectures (52 hours) beginning 13 September

How to direct and/or produce for today's theatre including a comparative analysis of techniques used on stage, motion pictures, television. A complete concept from casting to final production. The second half will include field trips to studios of three media. Students will be working in a TV studio and film production house for a learning experience. This course is designed for those who have some practical experience but lack theory of the fundamentals.

(33) EFFECTIVE TELEVISION COMMUNICATION

671-204X-51

DAY: Mondays 6 - 9 p.m.
FEE: $125.00
DURATION: 13 classes (39 hours) beginning 13 September

This course is designed for people who are presently responsible for (or those who are interested in) some aspect of television communication in a non-commercial environment. The student is introduced to the theory, equipment, techniques and practices of television production. Practical experience constitutes 60% of the course time.

(34) NEWS WRITING FOR RADIO AND TV

671-206Y-71

DAY: Wednesdays 6 - 8 p.m.
FEE: $65.00
DURATION: 13 lectures (26 hours) beginning 12 January

This course is designed to develop an understanding of the principles of communication in our democratic society. Emphasis will be placed on the actual writing. Topics will include: Public Service Copy, Promotion copy, Commercial Copy, Program formats and fact sheets.

HUMAN BEHAVIOUR

(35) INTRODUCTION TO PSYCHOLOGY

672-200Z-66

DAY: Tuesdays 8 - 10 p.m.
FEE: $110.00
DURATION: 26 lectures (52 hours) beginning 14 September

An introduction to basic methods and terminology. The course will cover biological issues in psychology, measurement methods, learning, motivation, and perceptual development. Human functioning will be treated in terms of emotion, problem solving, personality, psychological disorders. The lecturer's objective will be to develop the student through personal involvement and active observation.

(36) PSYCHOLOGICAL DEVELOPMENT I

672-201X-51

DAY: Mondays 6 - 8 p.m.
FEE: $65.00
DURATION: 13 lectures (26 hours) beginning 13 September

This course is designed for the interests of the general public, with or without a specialized background in psychology. It will follow the processes of psychological development from birth to maturity in the areas of social behaviour, personality and emotion. Format will consist of readings, films and discussion.

(37) PSYCHOLOGICAL DEVELOPMENT II

672-202Y-51

DAY: Mondays 6 - 8 p.m.
FEE: $65.00
DURATION: 13 lectures (26 hours) beginning 10 January.

This is a continuation course of Psychological Development I although it may be taken separately. Consideration will be given to processes or psychological development from birth to maturity in the areas of intelligence, perception and language. Format similar to Part I.

(38) HUMAN RELATIONS I

672-230Z-51

DAY: Mondays 6 - 8 p.m.
FEE: $100.00
DURATION: 26 lectures (52 hours) beginning 13 September

This course is a broad introduction to human relations, stressing understanding of interpersonal experiences. Topics include perception, motivation, reaction to conflict, problem solving, group operations and communication, group pressures, conformity and independence, leadership, people and technology. Class limited. Second Section from 8 - 10 p.m. if required. Registrations accepted for 6 p.m. on first come, first served basis only.

(39) HUMAN RELATIONS II

672-231Z-71

DAY: Wednesdays 6 - 8 p.m.
FEE: $100.00
DURATION: 26 lectures (52 hours) beginning 15 September
PREREQUISITE: Introduction to Psychology or Human Relations I or Equivalent

This course will develop and apply principles learned previously to increase self-understanding through psychological tests and interviews, observing and reporting on group discussions, etc. It will help participants apply knowledge about self and human interaction to formation of personal and career plans. Class limited.

(40) EXPLORING SOCIAL ISSUES THROUGH DRAMATIC GAMES

672-232X-71

DAY: Wednesdays 6 - 8 p.m.
FEE: $65.00
DURATION: 13 sessions (26 hours) beginning 15 September

In this learning by doing course participants experience dramatic ways to explore contemporary social issues. Responsibility to self, family and community will be studied through varied forms of role play and simulation games plus discussion. The topic is serious; the sociodramatic method is fun.

(41) AN UNDERSTANDING OF CRIMINAL LAW — PART I

672-271X-66

DAY: Tuesdays 8 - 10 p.m.
FEE: $60.00
DURATION: 13 lectures (26 hours) beginning 16 September

An introduction to many aspects of criminal law for the layman. It will cover: constitutional aspects, types of offences, serious offences, sexual offences, other offences, parties to offences, defences.

(42) AN UNDERSTANDING OF CRIMINAL LAW — PART II

672-272Y-66

DAY: Tuesdays 8 - 10 p.m.
FEE: $60.00
DURATION: 13 lectures (26 hours) beginning 11 January

This part of the course will continue with the following topics: juvenile offenders, deviant behaviour, arrest, arraignment, bail, preliminary inquiry, sentencing, confinement of individuals in mental institutions, social implications of conviction and criminal record.

LITERATURE AND DRAMA

(43) TWENTIETH CENTURY LITERATURE — PART I

670-200X-76

DAY: Wednesdays 8 - 10 p.m.
FEE: $60.00
DURATION: 13 lectures (26 hours) beginning 15 September

Short stories, novels, plays, and poetry by major twentieth century writers. Selection of texts will be discussed at the first meeting. The course will be conducted using a mixture of lecture and class discussion.

(44) TWENTIETH CENTURY LITERATURE — PART II

670-201Y-76

DAY: Wednesdays 8 - 10 p.m.
FEE: $60.00
DURATION: 13 lectures (26 hours) beginning 12 January

A variety of modern writers and genres, demonstrating major literary themes of today. The course is a continuation of Part I but may be taken separately. The format of the course remains the same, but different works will be studied. Texts will be discussed at the first meeting of the course.

(45) INTRODUCTION TO DRAMA AND THEATRE

670-206Z-71

DAY: Wednesdays 6 - 8 p.m.
FEE: $100.00
DURATION: 26 lectures (52 hours) beginning 15 September

A study of the dramatic text and its realization in a theatre performance. Special attention will be paid to the following areas: The play and the playwright; The actor and art of acting; Design and stagecraft; Directors and directing; Audience and dramatic criticism. Plays to be studied will be announced at first class. Locally produced plays may be included as well as some television programs and films.

(46) THEATRE OF THE ABSURD — ALIENATION OF MAN

670-207X-51

DAY: Mondays 6 - 8 p.m.
FEE: $60.00
DURATION: 13 lectures (26 hours) beginning 13 September

A study of Absurd Drama as a unique presentation of 20th Century man. What is Absurd Drama? What is the image of modern man? What is an Absurd World? How does one live an Absurd Life in an Absurd World? Through the study of many plays these questions and others will be explored.

POLITICAL SCIENCE

(47) THE ARAB WORLD

670-215X-81

DAY: Thursdays 6 - 8 p.m.
FEE: $60.00
DURATION: 13 lectures (26 hours) beginning 16 September

This course will study the social and intellectual history of the Arab world, explaining the ideologies and trends of today. Presently counting 21 countries, stretching from the Indian Ocean to the Atlantic, with a population of 130 million, the Arab world plays an important part in the Third World (non-alignment, OAU).

(48) THE NEW INTERNATIONAL RELATIONS

670-218Y-81

DAY: Thursdays 6 - 8 p.m.
FEE: $60.00
DURATION: 13 lectures (26 hours) beginning 13 January

An attempt to explain some of the changes taking place in the international arena. Balance of power, economic theories of imperialism and war, conflict theories, game/simulation theories and others will be covered.

(49) REPORT FROM CHINA — PART I

670-219X-71

DAY: Wednesdays 7 - 9:30 p.m.
FEE: $40.00
DURATION: 6 lectures (15 hours) beginning 15 September

An up to date picture of politics, work and life in modern China. Included will be China's approach to development, rural life, industry, health care, women in Chinese society, national minorities, education. Well illustrated with films made by lecturer during his two year stay in Peking.

(50) REPORT FROM CHINA — PART II

670-220X-71

DAY: Wednesdays 7 - 9:30 p.m.
FEE: $40.00
DURATION: 6 lectures (15 hours) beginning 3 November

An in-depth look at the politics, economics and social development in modern China. Among topics to be covered are: the Cultural Revolution and mass political campaigns, foreign policy, "self-reliance", and the role of women.

RELIGIOUS STUDIES

(51) RELIGIOUS TRADITIONS OF THE ANCIENT NEAR EAST (3 credits)

260-201X-51

DAY: Mondays 6 - 8 p.m.
FEE: $65.00
DURATION: 13 sessions (26 hours) plus conferences, beginning 13 September

The religions of ancient Egypt, Mesopotamia and Canaan; a brief consideration of religion in general, its origin, nature and study; a consideration of the geographical, historical and cultural conditions which influenced religious expression; myth and ritual.

(52) COMPARATIVE RELIGION (3 credits)

260-351X-71

DAY: Wednesdays 6 - 8 p.m.
FEE: $65.00
DURATION: 13 sessions (26 hours) plus conferences, beginning 15 September

A cross cultural analysis of a religious motif (to vary each year) and an introduction to the methodological problems of comparing religious phenomena. The Sacred City and the Wilderness: special focus on the "beloved places" of Vaisnavism, the homeland of the Buddha, Mecca, Jerusalem and Quebec.

(53) INDIAN RELIGIONS

670-217Y-56

DAY: Mondays 8 - 10 p.m.
FEE: $60.00
DURATION: 13 lectures (26 hours) beginning 10 January.

This course will undertake a comparative study of the complexity of life on the subcontinent which is a result of the interaction of the different religions.

SPECIAL COURSES FOR WOMEN

(54) INTRODUCTION TO MANAGEMENT FOR WOMEN

626-014X-61

DAY: Tuesdays 6 - 9 p.m.
FEE: $85.00
DURATION: 13 classes (39 hours) beginning 14 September

The role of line and staff, span of control in functional areas such as planning production, finance, marketing, control, research and development and their inter-relationship will be discussed. Also — shareholders', customers', workers' and managers' needs will be examined. One hour of class time will be devoted to preparation and discussion of assignments.

(55) BEHAVIOURAL DIMENSIONS OF WOMEN IN MANAGEMENT

622-022Y-66

DAY: Tuesdays 8 - 10 p.m.
FEE: $65.00
DURATION: 30 hours starting date to be announced

This course will look at the situation women have to face as women in a management situation. It will be composed of lectures and some experiential work for each participant. The 30 hour session includes one weekend workshop. Class limited.

(56) WOMEN AND THE LAW

672-270X-56

DAY: Mondays 8 - 10 p.m.
FEE: $60.00
DURATION: 13 weeks (26 hours) beginning 13 September

This course is designed to acquaint women with recent changes in law as it pertains to marriage, divorce, separation, children, adoption, the single woman in business, woman and criminal law (rape, abortion etc.), women's rights. (Not restricted to women)

SPECIAL SHORT TERM COURSES

(57) MIDDLE AGE: PRIME TIME?

670-233X-66

DAY: Tuesdays 8 - 10 p.m.
FEE: $40.00
DURATION: 6 sessions (12 hours) beginning 14 September
OPEN TO: Men and Women, age 35 - 55

A series of experiential workshops focusing on the issues and developmental tasks of middle age. These include the sources of our identity, changing old roles and old messages, using growing freedom, developing perspective, facing loss, understanding decision making processes and interpersonal needs to make this a vital and creative life period.

OTHER SHORT TERM COURSES TO BE ANNOUNCED

TIMETABLE — LIBERAL ARTS

MONDAY

6:00 - 8:00	(46) 670-207X-51	Theatre of the Absurd
	(16) 114-201X-51	Ancient Greek History
	(17) 114-241Y-51	Ancient History (Roman)
	(26) 671-103X-51	Basic Interior Design — Part I
	(27) 671-104Y-51	Basic Interior Design — Part II
	(38) 672-230Z-51	Human Relations I
	(8) 674-400X-51	Anthropology — Canada's Native Peoples
	(11) 674-504X-51	Montreal — aujourd'hui et hier
	(51) 260-201X-51	Religious Traditions of the Ancient Near East
	(36) 672-201X-51	Psychological Development I
	(37) 672-202Y-51	Psychological Development II
6:00 - 9:00	(33) 671-204X-51	Effective Television Communication
7:00 - 9:00	(18) 670-101X-51	Early Renaissance Art in Italy
	(19) 670-102Y-51	Italian High Renaissance Art
7:00 - 10:00	(23) 671-100X-51	Introduction to Studio Art
	(24) 671-101Y-51	Drawing

8:00 - 10:00 (53) 670-217Y-56 Indian Religions
(32) 671-203Z-56 Theatre, Television, Film: Directing and Producing
(56) 672-270X-56 Women and the Law
(12) 674-505Y-56 Canadian Economic Geography

(22) 670-223X-56 Opera as Theatre

TUESDAY

6:00 - 8:00 (28) 671-105X-61 Residential Interior Design — Part I
(29) 671-106Y-61 Residential Interior Design — Part II
(1) 670-211X-61 Biblical Archaeology
(2) 670-212Y-61 Sumer — the World's First Civilization
(30) 671-200X-61 Creative Writing
(30) 671-200Y-61 Creative Writing
(9) 674-500X-61 History — Canada to 1867
(10) 674-501Y-61 History — Canada since 1867
(13) 495-472X-61 Environmental Law for Citizens
(6) 674-102Y-61 Contemporary Canadian Art
(5) 674-100X-61 Canadian Art History

6:00 - 9:00 (54) 626-014X-61 Introduction to Management for Women

7:00 - 10:00 (24) 671-101X-61 Drawing
(24) 671-101Y-61 Drawing

8:00 - 10:00 (35) 672-200Z-66 Introduction to Psychology
(55) 622-022Y-66 Behavioural Dimensions of Women in Management
(41) 672-271X-66 An Understanding of Criminal Law — Part I
(42) 672-272Y-66 An Understanding of Criminal Law — Part II
(57) 672-233X-66 Middle Age: Prime Time?

WEDNESDAY

6:00 - 8:00 (45) 670-206Z-71 Introduction to Drama and Theatre
(14) 114-203X-71 Introduction to Greek Mythology
(15) 114-300Y-71 Greek Drama and Theatre
(26) 671-103X-71 Basic Interior Design — Part I
(27) 671-104Y-71 Basic Interior Design — Part II
(34) 671-206Y-71 News Writing for TV and Radio
(39) 672-231Z-71 Human Relations II
(40) 672-232X-71 Exploring Social Issues through Dramatic Games
(52) 260-351X-71 Comparative Religion
(3) 670-221X-71 Ancient Egypt
(4) 670-222Y-71 The Hittites, the Assyrians and the Persians

7:00 - 9:30 (49) 670-219X-71 Report from China — I
(50) 670-220X-71 Report from China — II

7:00 - 10:00 (25) 671-102X-71 Painting
(25) 671-102Y-71 Painting

8:00 - 10:00 (43) 670-200X-76 Twentieth Century Literature — Part I
(44) 670-201Y-76 Twentieth Century Literature — Part II
(7) 674-103X-76 Eskimo and North American Indian Art

THURSDAY

6:00 - 8:00 (47) 670-215X-81 The Arab World
(48) 670-218Y-81 The New International Relations
(31) 671-201Z-81 Writing for Films

8:00 - 10:00 (20) 670-106X-86 Art of Listening — Part I
(21) 670-107Y-86 Art of Listening — Part II

10 MANAGEMENT GRADUATE

Professor W. H. Ellis
Associate Director
392-6700

INTRODUCTION

This section of the Centre offers courses leading to the Diploma in Management, the MBA first year, and the Diploma in Management (Tourism).

COUNSELLING

Counselling will be available by appointment only up to 20 August. There will be no counselling during the registration period.

TRANSCRIPTS

Students registering for the first time must arrange for an official transcript to be mailed to the Associate Director, Diploma in Management Programs indicating the specific program in which they are registering.

EXAMINATIONS

An examination is held at the end of each course unless specifically exempted. Candidates who fail to pass a course may be permitted to write a supplemental examination. To qualify for supplemental privileges, students must first write the final examination in the course and obtain at least 40%. Candidates who fail to pass the supplemental examination will be required to repeat the course. Students who do not write a final exam in any course and fail to provide justification for their absence must repeat the course.

Students will receive written confirmation of their examination or course results after each term. As the results of each course become available, they will be posted on the Notice Board in Strathcona Hall by STUDENT NUMBER. Results cannot be obtained by telephone.

Final examinations will be held from Wednesday 8 December to Saturday 18 December for all fall term courses in the Diploma Programs and in April for winter term courses.

SUPPLEMENTALS

Students who fail to pass a summer course must write the supplemental examination with the December final examinations. Those wishing to sit the supplemental must apply in writing or at Strathcona Hall. Those who fail to pass a course in December may write the supplemental examination either in April (providing an exam is being given) or during the supplemental period in early July. Students must write their supplemental exam within two examination periods or forfeit their supplemental privilege.

REREADS

Students may request rereads of final exams on payment of the required $15.00 fee. Students wishing to apply for a reread must do so within 30 days following the posting of the final marks in Strathcona Hall.

GRADING SYSTEM

The Centre uses the grading system common to the University. Unless otherwise noted in the description of an individual course or program, the grading system will be as indicated on page 7 of the General Information.

A mark of A or B is a pass at the Graduate level.

SUMMER PROGRAM

All courses in the M.B.A. I Direct Entry Program will be offered during the summer. The first session will be held from May to June and the second session from July to August. This factor should be kept in mind by students who wish to plan a program that would allow them to complete the Diploma Program as expeditiously as possible.

CANDIDATES FOR THE DIPLOMA

Candidates who expect to receive the Diploma at Spring Convocation 1977 are required to complete application forms, available at the Centre for Continuing Education. The completed forms and payment ($10.00) must reach the Centre by 1 March 1977.

Candidates who expect to receive the Diploma at Fall Convocation must return the completed forms to the Centre by 30 July 1977.

Students who pay the fee for obtaining the Diploma but fail to meet the graduation requirements do not have to pay again when they become eligible candidates at a subsequent convocation. Another non-thesis form, however, is required for submission to the Centre by the dates given above.

LIBRARIES

Full library privileges are available to all students registered in the Diploma in Management Programs at the following locations:

1) Howard Ross Library of Management
   Samuel Bronfman Building
   1001 Sherbrooke Street West

2) McLennan Library
   McGill Campus

TUITION FEES

Students who have been reclassified into the first year of the MBA Program pay tuition fees at the rate of $19 per credit (i.e. $57.00 per course). This reduced rate is possible because the University receives grants for degree students from the Quebec Department of Education.

COURSE INFORMATION

A listing of instructors, books, buildings and rooms will be distributed at time of registration. Please ask for a copy.

REGULATIONS AND PROCEDURES

Please see General Information.

IT IS THE RESPONSIBILITY OF EACH STUDENT TO READ, UNDERSTAND, AND ABIDE BY THE REGULATIONS AND PROCEDURES PRINTED IN THIS BOOKLET.

NOTE: Due to a holiday on Monday 6 September all Monday evening classes will commence on 13 September.

All M.B.A. I Direct Entry courses will be repeated in January 1977.

DIPLOMA IN MANAGEMENT PROGRAM

(In Cooperation with the Faculty of Management)

To meet the demand for the more advanced and broader training required by those graduates whose work is primarily administrative and managerial, the Centre for Continuing Education, in cooperation with the Faculty of Management, offers a series of courses leading to a Diploma in Management. While these courses are intended primarily for those interested in obtaining the Diploma, all courses are open to any graduate interested in an individual course.

PROGRAM REQUIREMENTS

1) Applicants must have a university degree with good standing from an approved university (exception indicated in next paragraph). Arrangements must be made for an official transcript to be mailed to the Associate Director, Diploma in Management Programs preferably before registration. This also applies to McGill graduates.

2) Students who do not have a university degree but are C.A.'s, Registered Professional Engineers, graduates of recognized Technical Colleges or those holding the H.N.C. may be admitted on a provisional basis. After completing two subjects their records will be reviewed and those who have distinguished themselves may be given permission to pursue the program as regular students on approval of the Faculty of Management.

3) TEST FOR COLLEGE-ENTRANCE MATHEMATICS

All evening students entering the Diploma in Management program for credit must demonstrate an adequate knowledge of college-entrance mathematics by successfully completing either: 1) Survey of Basic Mathematics 277-674 or 2) the Test for College-Entrance Mathematics.

Students failing the Test must enrol in Survey of Basic Mathematics 277-674 and successfully complete it before registering for any Diploma courses except, Behavioural Science, Organizational Theory and Design, Economic Environment of the Firm and Accounting — A Management Approach.

Students who wish to sit the Test on any of the given dates mentioned below may obtain a sample test, supplemental notes and an application from the Centre upon request. There will be a $5.00 fee (non-refundable) for the College-Entrance Mathematics Test.

Wednesday 28 July 1976
Monday 16 August 1976
Wednesday 17 November 1976
Thursday 7 April 1977

4) Students who have completed post-graduate level courses at a recognized university may apply for transfer of credits. An official description of the courses taken elsewhere and the marks obtained must be submitted before completing the first year of the program.

5) Students who have completed some of the required courses at the undergraduate level at McGill or elsewhere may substitute elective courses. In requesting exemption from required courses, the student must submit an official description of the content of the course he regards as equivalent and a transcript of his marks.

6) Candidates must obtain a mark of not less than 65% in each course. Those who fail to obtain 65% may under certain circumstances write a supplemental examination ($15.00) but if the standing obtained in the supplemental examination is less than 65%, the student must repeat the course to receive the Diploma credit. Candidates are permitted to repeat any course once only. No candidate who has failed more than three courses on the first attempt will be granted the Diploma.

7) The Diploma may be obtained in two years but the student is advised to spread the work over a longer period not exceeding seven years.

CORE COURSES

Students wishing to qualify for the Diploma in Management must complete at least one course in each of the five groups listed below:

I.	(2)	Basic Management Statistics
	(3)	Statistics for Business Decisions
	(8)	Introduction to Modelling Methods
II.	(4)	Accounting — A Management Approach
	(9)	Finance I
III.	(10)	Economic Environment of the Firm
	(5)	Economic Analysis of Business
IV.	(7)	Behavioural Science
	(12)	Organizational Theory and Design
V.	(6)	Data Processing and Computers
	(11)	Marketing Management I

All Diploma candidates must take, in addition to the above five required "core" courses, five electives from within the above core or from the list below:

(13) Sales Management
(14) Investment Analysis
(15) Industrial Production
(16) Personnel and Industrial Relations

(17) Introduction to International Business
(18) Agrimarketing
(19) Agribusiness Management
(20) Health Care Organization: Canadian Institutions and Agencies
(21) Health Care Applications of Quantitative Methods
(22) Hospital Organization and Management
(23) Geography of Tourism
(24) Sociology of Tourism
(25) Management Applications in Tourism
(26) Hotel, Motel and Restaurant Management
(27) Recreation
(29) Resort Area Development
(29) Travel Agency Management

Also from the Chartered Accountancy Program (Subject to meeting the required prerequisites):

(2) Financial Accounting II
(3) Financial Accounting III
(15) Financial Accounting IV
(20) Financial Accounting V
(19) Management Control Systems
(5) Auditing I
(16) Auditing II
(21) Auditing III
(6) Taxation I
(23) Taxation II
(4) Managerial Accounting
(17) Advanced Managerial Accounting
(22) Computer Systems — Audit & Control
(13) Law I
(18) Law II
(14) Management Policy

M.B.A. I PROGRAM

I. DIRECT ENTRY ADMISSION REQUIREMENTS

a. An undergraduate degree from an accredited college or university with a Grade Point Average of at least 3.0 out of a possible 4.0 or at least a B average.

b. The Graduate Management Admission Test (G.M.A.T.) and the Test of English as a Foreign Language. The latter is required only for foreign students whose first language is not English.

II. RECLASSIFICATION AS M.B.A. I STUDENTS

a. Candidates who have a university degree but are not accepted for direct admission into the M.B.A. I program may register in the Diploma in Management program in the Centre for Continuing Education. After they have completed FOUR of the M.B.A. I courses, with an average of 70% or over, they may apply for reclassification as an M.B.A. I candidate.

b. An acceptable score in the Graduate Management Admission Test.

TEST FOR COLLEGE-ENTRANCE MATHEMATICS

All students entering the M.B.A. I program for the part-time students must demonstrate an adequate knowledge of college-entrance mathematics by successfully completing (1) Survey of Basic Mathematics 277-674 or (2) the Test for College-Entrance Mathematics. For further information see Diploma in Management Program Requirement No. 3 Page 92.

PROGRAM

The Diploma courses that must be taken by those who aspire to direct entry in the second year of the MBA are indicated below. It must be emphasized, however, that successful completion of this program does not automatically guarantee admission. Acceptance is dependent upon the student's overall average in the Diploma program, the number of openings and the competition for openings in any given year. Students who successfully complete the ten required courses for M.B.A. I will be eligible to receive the Diploma in Management. For details see *Candidates for the Diploma* on page 90.

(2) Basic Management Statistics
(4) Accounting — A Management Approach
(5) Economic Analysis of Business
(6) Data Processing and Computers
(7) Behavioural Science
(8) Introduction to Modelling Methods
(9) Finance I
(10) Economic Environment of the Firm
(11) Marketing Management I
(12) Organizational Theory and Design

The deadline dates for submission of M.B.A. I applications are:

15 May for admission in September
15 November for admission in January
15 March for admission in summer courses

Application forms may be obtained from the address below:

Miss Brenda E. Martin
Supervisor, Part-Time Programs
Faculty of Management
1001 Sherbrooke St. W.
Montreal, Quebec H3C 1G5

or telephone (514) 392-5938

M.B.A. II PROGRAM

Each year qualified students are admitted directly into the second year of the M.B.A. program, on either a full-time or part-time basis.

Candidates can qualify for admission into the M.B.A. II program in either of the following ways:

1. Successful completion of the first year full-time program.
2. Students who have received the Diploma in Management and have completed all the required courses with an average of 70% or better, but have not been reclassified as M.B.A. I students, may apply for admission into the M.B.A. II program. A passing mark of 65% is required in all courses.
3. C.A. GRADUATES SINCE 1969

   University graduates who have obtained their C.A. diploma since 1969 may qualify for entry into the second year of the M.B.A. program after completing an approved program of four courses with at least a 70% average.
4. In some cases, where the candidate has obtained the Diploma in Management and has completed all but one of the required courses with a high average (70% +), he may be permitted to enter the M.B.A. II program and allowed to carry the remaining course for one year.

A satisfactory score in the Graduate Management Admission Test is also necessary in each of the above alternatives.

Further information and application forms regarding the M.B.A. II program may be obtained from Miss Brenda Martin at the address indicated previously.

COURSE DESCRIPTIONS

(1) SURVEY OF BASIC MATHEMATICS

277-674X-51	DAY:	Mondays 6 - 9 p.m.
	FEE:	$95.00
	DURATION:	13 lectures (39 hours) beginning week of 13 September

The first part of the course will be spent in an intensive review of basic mathematics including algebra, graphs, functions and logarithms. The last part of the course will introduce the student to calculus including limits, functions of one variable, differentiation, integration and applications; and to matrix algebra including determinants and solutions of simultaneous linear equations. The material covered in this course will be adequate to enable students to follow the usual mathematical applications in business, economics, statistics and operations research.

(2) BASIC MANAGEMENT STATISTICS

277-613X-51	DAYS:	Mondays 6 - 9 p.m.
277-613X-71		Wednesdays 6 - 9 p.m.
	FEE:	$110.00 (includes $15 for use of the computer)
	DURATION:	13 lectures (39 hours) beginning week of 6 September
	PREREQUISITE:	College-entrance mathematics or Survey of Basic Mathematics

Topics covered include: descriptive statistical analysis, common probability distributions (binominal, Poisson, normal), sampling procedures, sampling distributions, estimation, hypothesis testing, distribution-free procedures (tests of goodness of fit and independence), simple and multiple regression, correlation, one-way analysis of variance, classical time series analysis, Bayesian probability analysis. The course stresses the use of computer programs as an aid in statistical analysis.

(3) STATISTICS FOR BUSINESS DECISIONS (offered until 1977 only)

277-671X-51	DAY:	Mondays 6 - 9 p.m.
	FEE:	$110.00 (includes $15 for use of the computer)
	DURATION:	13 lectures (39 hours) beginning week of 13 September
	PREREQUISITE:	Basic Management Statistics or equivalent.

Bernoulli and Poisson processes, Bayesian inference, decision theory, regression and correlation analysis, sampling theory, experimental design and analysis of variance, nonparametric methods, index numbers, classical time series analysis and exponential smoothing. Several exercises using statistical computer programs available on the McGill RAX system are assigned.

(4) ACCOUNTING — A MANAGEMENT APPROACH

271-611X-51	DAYS:	Mondays 6 - 9 p.m.
271-611X-61		Tuesdays 6 - 9 p.m.
271-611X-62 (John Abbott College Kirkland Campus)		Tuesdays 7 - 10 p.m.
271-611X-71		Wednesdays 6 - 9 p.m.
271-611X-81		Thursdays 6 - 9 p.m.
	FEE:	$95.00
	DURATION:	13 lectures (39 hours) beginning week of 6 September

This course focuses on the internal use of accounting data by management for planning and control purposes and in the decision-making process. Covered are the basic concepts of financial accounting, the analysis and interpretation of financial statements, cost and control concepts, budgeting and the measurement of performance.

(5) ECONOMIC ANALYSIS OF BUSINESS

279-692X-51	DAYS:	Mondays 6 - 9 p.m.
279-692X-71		Wednesdays 6 - 9 p.m.
279-692X-72		Wednesdays 6 - 9 p.m.
	FEE:	$95.00
	DURATION:	13 lectures (39 hours) beginning week of 6 September
	PREREQUISITE:	Basic Management Statistics

This course is primarily devoted to demonstrating the applications of economic theory and methodology in solving business problems. The following topics are discussed in some detail: demand, production, cost analysis, pricing, growth, concentration, profitability, and resource allocation of the firm. Marketing and sales forecasting techniques are also introduced briefly, and attention is given to opportunities for the application of incremental analysis.

(6) DATA PROCESSING AND COMPUTERS

273-631X-61	DAYS:	Tuesdays 6 - 9 p.m. (Cobol)
273-631X-62		Tuesdays 6 - 9 p.m. (Fortran)
273-631X-71		Wednesdays 6 - 9 p.m. (Fortran)
	FEE:	$125 (includes $30 for use of the computer)
	DURATION:	13 lectures (39 hours) beginning week of 6 September

The course covers a variety of topics including computer concepts, programming systems, time-sharing, file organization and modern applications of the computer. Instruction will be given in the use of one or more programming languages and students will be assigned problems involving actual use of the computer.

(7) BEHAVIOURAL SCIENCE

272-621X-51	DAYS:	Mondays 6 - 9 p.m.
272-621X-61		Tuesdays 6 - 9 p.m.
272-621X-81		Thursdays 6 - 9 p.m.
	FEE:	$95.00
	DURATION:	13 lectures (39 hours) beginning week of 6 September

The implications for management and the essential concepts of social psychology such as motivation, perception, attitude change and organization, group and organizational dynamics will be the major emphasis of the course. Classroom discussion and student participation is encouraged.

(8) INTRODUCTION TO MODELLING METHODS

277-612X-51	DAYS:	Mondays 6 - 9 p.m.
277-612X-61		Tuesdays 6 - 9 p.m.
	FEE:	$95.00
	DURATION:	13 lectures (39 hours) beginning week of 6 September
	PREREQUISITE:	College entrance mathematics or Survey of Basic Mathematics

Topics covered include: Introduction to Decision Analysis and Risk Attitudes, Inventory Control, Elementary Queueing Models, Simulation, Linear Programming Models and Extensions. The course stresses the formulation of problems and their solution by standard methods or computer packages.

(9) FINANCE I

274-641X-51	DAYS:	Mondays 6 - 9 p.m.
274-641X-61		Tuesdays 6 - 9 p.m.
274-641X-81		Thursdays 6 - 9 p.m.
	FEE:	$95.00
	DURATION:	13 lectures (39 hours) beginning week of 6 September

PREREQUISITE: Accounting 271-611 and Economic Analysis of Business 279-692

An introduction to financial management and the role of finance, both within the firm and the economy as a whole. The institutional framework of the firm is discussed, including legal forms, taxes, financing instruments and the capital markets. An introduction to the analytics of finance is presented including the pricing of financial instruments, simple models of capital market equilibrium, the financial structure of the firm, cost of capital, dividend policy, investment criteria for new capital spending proposals, and working capital management.

(10) ECONOMIC ENVIRONMENT OF THE FIRM

279-691X-61	DAYS:	Tuesdays 6 - 9 p.m.
279-691X-71 (John Abbott College Kirkland Campus)		Wednesdays 7 - 10 p.m.
279-691X-81		Thursdays 6 - 9 p.m.
279-691X-82		Thursdays 6 - 9 p.m.
	FEE:	$95.00
	DURATION:	13 lectures (39 hours) beginning week of 6 September

This course examines the main macro-economic mechanisms, i.e. income determination and the multiplier theory as well as fiscal policy; the level of investment, the demand for money and the rate of interest as well as the Canadian banking system and deposit creation; the general equilibrium of product and money markets, and monetary and fiscal policies; the dynamics of investment, the employment sector, and the price level and inflation; the balance of payments and international trade as well as methods of dealing with balance-of-payments disequilibria.

(11) MARKETING MANAGEMENT I

275-651X-51	DAYS:	Mondays 6 - 9 p.m.
275-651X-61 (John Abbott College Kirkland Campus)		Tuesdays 7 - 10 p.m.
275-651X-81		Thursdays 6 - 9 p.m.
	FEE:	$95.00
	DURATION:	13 lectures (39 hours) beginning week of 6 September
	PREREQUISITE:	Economic Analysis of Business and Accounting — A Management Approach

A combination of lectures, and case studies involving team-work will be used. Lectures and text material will cover the marketing concept, law, buyer, behaviour, product-policy, advertising, pricing, distribution, research, and marketing planning. Canadian content will be used where appropriate. Case studies at weekly intervals will provide opportunities for involvement in problem-solving.

(12) ORGANIZATIONAL THEORY AND DESIGN

272-623X-51	DAYS:	Mondays 6 - 9 p.m.
272-623X-61		Tuesdays 6 - 9 p.m.
272-623X-71		Wednesdays 6 - 9 p.m.
	FEE:	$95.00
	DURATION:	13 lectures (39 hours) beginning week of 6 September

The course is aimed at studying how organizations are designed. The focus is on the relationship between the nature of the external environment of the organization, the technology it uses, and the management style, the goals, the organizational structure, the behaviour of individuals and groups in the organization, and its performance. A systems view is adopted. Implications for effective design of organizations are drawn.

(13) SALES MANAGEMENT

606-630Y-51

DAY: Mondays 6 - 9 p.m.
FEE: $95.00
DURATION: 13 lectures (39 hours) beginning week of 10 January 1977

An analytical study of the techniques and policies employed in the operation of a sales organization. The approach is from the viewpoint of the sales manager of an enterprise. Extensive use will be made of case materials in considering the problems of recruiting, training, controlling and managing the sales force. Sales appeals, quotas, and sales analysis and forecasting will also be discussed.

(14) INVESTMENT ANALYSIS

606-430X-51

DAY: Mondays 6 - 9 p.m.
FEE: $95.00
DURATION: 13 lectures (39 hours) beginning week of 13 September

This course deals with security analysis and investment techniques, covering the different types and classes of securities. The sources of information, methods of compiling statistics, and assessment of comparative values are discussed, together with portfolio objectives and differing philosophies of investment management. Broad economic trends and international political climates affecting security values are analysed.

(15) INDUSTRIAL PRODUCTION

606-820X-61

DAY: Tuesdays 6 - 9 p.m.
FEE: $95.00
DURATION: 13 lectures (39 hours) beginning week of 6 September

An examination of the Production System and its sub-systems. The design of Production Systems (Layout of facilities, Job Design) and Operations Planning and Control constitute the principal topics. Traditional concepts and analytical techniques will be developed concurrently.

(16) PERSONNEL AND INDUSTRIAL RELATIONS

606-930Y-71

DAY: Wednesdays 6 - 9 p.m.
FEE: $95.00
DURATION: 13 lectures (39 hours) beginning week of 10 January 1977

This course will be concerned with the general area of industrial relations, which includes an examination of the personnel function in modern industry. The use of behavioural science in industry will be discussed and analysed. Trade unionism and its functions in the United States and Canada will be examined as well as the nature of industrial conflict and the role of the state in law and dispute settlement machinery.

(17) INTRODUCTION TO INTERNATIONAL BUSINESS

278-686X-51

DAY: Mondays 6 - 9 p.m.
FEE: $95.00
DURATION: 13 lectures (39 hours) beginning week of 13 September

This course seeks to develop conceptual and analytic skills necessary to formulate feasible and effective management policies in multinational environments. It examines both levels of the international businessman's world: the environment (economic, political and social) within which he will be operating, and the new dimensions of his traditional management operations. A combination of lectures, discussions and case studies will be used.

(18) AGRIMARKETING

334-640X-81

DAY: Thursdays 6 - 9 p.m.
FEE: $95.00
DURATION: 13 lectures (39 hours) beginning week of 6 September

This course will deal with agriculture and food marketing, management, and policy. The course will include detailed study of marketing functions, commodity marketing, retail and food service marketing encompassing the total Canadian agriculture and food system from producer to consumer.

(19) AGRIBUSINESS MANAGEMENT

334-650Y-81

DAY: Thursdays 6 - 9 p.m.
FEE: $95.00
DURATION: 13 lectures (39 hours) beginning week of 10 January 1977

A course in management and agricultural business dealing with the agribusiness firm engaged in agricultural production and marketing and related farm supply business. The focus of the course is on agri-business organization, operation, financial management and agribusiness policy in today's complex and changing international environment.

(20) HEALTH CARE ORGANIZATION: CANADIAN INSTITUTIONS AND AGENCIES

280-603X-81

DAY: Thursdays 6 - 9 p.m.
FEE: $95.00
DURATION: 13 lectures (39 hours) beginning week of 6 September

The course is devoted to the evolution and present organization of the Canadian Health Care System as influenced by sociological, economic, political and technical factors at both Federal and Provincial levels. A major portion of the course focuses on Quebec.

(21) HEALTH CARE APPLICATIONS OF QUANTITATIVE METHODS

280-604X

DAY: TBA
FEE: $95.00
DURATION: 13 lectures (39 hours) beginning September 1977

The course surveys historical aspects of decision-making in hospitals and the recent increasing use of quantitative methods and computers in management decisions. A major portion of the course is devoted to the development of clinical decision theory, computer-guided diagnosis and the systematic study of major variables affecting clinical decisions. Much importance is given to the implications and usefulness of these tools for strategic hospital management decisions

(22) HOSPITAL ORGANIZATION AND MANAGEMENT

280-605Y

DAY: TBA
FEE: $95.00
DURATION: 13 lectures (39 hours) beginning week of 10 January 1977

A program of lectures, problems and case studies centered on (1) the relationships between providers of health services as they relate to hospital centres (2) a typology of hospital centers and (3) the organization and functioning of a most complex hospital centre.

DIPLOMA IN MANAGEMENT (TOURISM)

This Diploma in Management Program will enable qualified university graduates to pursue studies in the field of Tourism. It will provide a career opportunity for individuals who aspire to managerial positions in a rapidly growing industry.

ADMISSION REQUIREMENTS

Applicants must have a university degree from an approved university. Arrangements must be made for an official transcript to be mailed to the Associate Director, Diploma in Management Programs.

For further details on requirements see Diploma in Management, page 91.

CORE COURSES

Students wishing to qualify for the Diploma in Management (Tourism) must complete a total of ten courses, seven of which are "core" courses with three being selected from the group of electives.

I.	(4)	Accounting — A Management Approach
II.	(9)	Finance I
III.	(10)	Economic Environment of the Firm
IV.	(11)	Marketing Management I
V.	(23)	Geography of Tourism
VI.	(24)	Sociology of Tourism
VII	(25)	Management Applications in Tourism

Courses I to IV inclusive are offered as part of the Diploma in Management (M.B.A. I) Program.

ELECTIVES

(select any three)

(26)	Hotel, Motel and Restaurant Management
(27)	Recreation
(28)	Resort Area Development
(29)	Travel Agency Management

COURSE DESCRIPTIONS

(4)	Accounting — A Management Approach
(9)	Finance I
(10)	Economic Environment of the Firm
(11)	Marketing Management I

For course descriptions on the above see the Diploma in Management Program.

(23) GEOGRAPHY OF TOURISM

608-830X-51

DAY:	Mondays 6 - 9 p.m.
FEE:	$95.00
DURATION:	13 lectures (39 hours) beginning 13 September

The contribution of geography to the description, explanation and interpretation of tourism and recreation, with special attention to spatial patterns, — local, national and international; to the organization and functioning of the international tourist system; and to local and regional impacts — ecological, cultural, social, economic and political.

(24) SOCIOLOGY OF TOURISM

608-835X-81

DAY:	Thursdays 6 - 9 p.m.
FEE:	$95.00
DURATION:	13 lectures (39 hours) beginning 9 September

The purpose of this course is to gain a better understanding of tourism as a social phenomenon. This will be done by examining the effects of tourism on host countries as well as on tourists themselves. Areas covered will include tourism psychology and motivation, the social significance of tourism, theories of social change, the economics of tourism, tourism development, tourism demand, the marketing of tourism and the future of tourism.

(25) MANAGEMENT APPLICATIONS IN TOURISM

608-610X-71

DAY:	Wednesdays 6 - 9 p.m.
FEE:	$95.00
DURATION:	13 lectures (39 hours) beginning 8 September
PREREQUISITE:	Accounting — A Management Approach

The principles and philosophy of tourism development will be covered with emphasis on financial, organizational, and decision-making theories as they relate to management. The impact of cultural differences on business organizations will be an integral part of the course.

(26) HOTEL, MOTEL AND RESTAURANT MANAGEMENT

608-840X-71

DAY: Wednesdays 6 - 9 p.m.
FEE: $95.00
DURATION: 13 lectures (39 hours) beginning 8 September

The organization of hotel operations, departmental breakdown and responsibilities of hotels and motels are covered along with the fiscal aspects of management. Emphasis will be placed on the functions of organization, supervision, and human relationships.

(27) RECREATION

608-855Y-71

DAY: Wednesdays 6 - 9 p.m.
FEE: $95.00
DURATION: 13 lectures (39 hours) beginning 12 January 1977

A study of the future requirements for leisure and recreation and of their fulfillment through the provision of appropriate tourist facilities. The role and character of outdoor recreation is related to the physical characteristics of Canada.

(28) RESORT AREA DEVELOPMENT

608-860Y-61

DAY: Tuesdays 6 - 9 p.m.
FEE: $95.00
DURATION: 13 lectures (39 hours) beginning 11 January 1977

A comprehensive examination will be made of the interrelationships of the marketing, financial and physical aspects of tourist destination development within a region. A management approach will be emphasized in dealing with the development of tourist centres and resort areas.

(29) TRAVEL AGENCY MANAGEMENT

608-870X-81

DAY: Thursdays 6 - 9 p.m.
FEE: $95.00
DURATION: 13 lectures (39 hours) beginning 9 September

The course will deal with the fundamental management principles for competent, effective and profitable travel agency operations. Among the topics covered will be office organization, financial administration, employee development, and performance evaluation.

COURSE LIST BY EVENING AND TIME:

Mondays 6 p.m.

(1) Survey of Basic Mathematics
(2) Basic Management Statistics
(3) Statistics for Business Decisions
(4) Accounting — A Management Approach
(5) Economic Analysis of Business
(7) Behavioural Science
(8) Introduction to Modelling Methods
(9) Finance I
(11) Marketing Management I
(12) Organizational Theory and Design
(13) Sales Management
(14) Investment Analysis
(17) Introduction to International Business
(23) Geography of Tourism

Tuesdays 6 p.m.

(4) Accounting — A Management Approach
(6) Data Processing and Computers
(7) Behavioural Science
(8) Introduction to Modelling Methods
(9) Finance I
(10) Economic Environment of the Firm
(12) Organizational Theory and Design
(15) Industrial Production

(28) Resort Area Development

Wednesdays 6 p.m.

(2) Basic Management Statistics
(4) Accounting — A Management Approach
(5) Economic Analysis of Business
(6) Data Processing and Computers
(10) Economic Environment of the Firm
(12) Organizational Theory and Design
(16) Personnel and Industrial Relations
(25) Management Applications in Tourism
(26) Hotel, Motel and Restaurant Management
(27) Recreation

Thursdays 6 p.m.

(4) Accounting — A Management Approach
(7) Behavioural Science
(9) Finance I
(10) Economic Environment of the Firm
(11) Marketing Management I
(18) Agrimarketing
(19) Agribusiness Management
(20) Health Care Organization: Canadian Institutions and Agencies
(24) Sociology of Tourism
(29) Travel Agency Management

11 MANAGEMENT

UNDERGRADUATE AND CERTIFICATE PROGRAMS

Edward Burnett
Associate Director
392-6704

INTRODUCTION

The Certificate, Professional and Undergraduate programs offered by this department of the Centre for Continuing Education are designed for students of high calibre and educational promise. The programs are built in such a way that students will be afforded the opportunity to fulfil the requirements of the McGill Certificates in Management as well as proceed towards the Bachelor of Commerce degree in the Faculty of Management at McGill. Students will also be able to meet the requirements of various professional groups. Students are urged to keep both their academic and professional goals in mind as they choose their courses. The B. Com. is a fairly long commitment. Students should seek admission to the degree program as early in their education as possible. See page 109 concerning the Bachelor of Commerce for part-time students. Careful reading of the following should ensure that a student can fulfil his or her own needs as well as complete the requirements of McGill and cooperating Associations.

This department offers the following:

MCGILL CERTIFICATES:

Administration
Appraisal of Real Estate
Banking
Business Communications
Insurance Brokerage
Marketing
Systems Design
Transportation

UNDERGRADUATE PROGRAM:

Bachelor of Commerce for part-time students in the Faculty of Management

PROFESSIONAL PROGRAMS:

Many organizations give professional and career acceptance to the McGill courses as well as offering their own external diplomas and certificates. The following organizations are interested in students as potential members. See pages 111 to 125 for full descriptions.

Administrative Management Society
Appraisal Institute of Canada
Association for Systems Management
Canadian Association for Physical Distribution Management
Canadian Credit Institute
Canadian Institute of Management
Canadian Institute of Traffic and Transportation
Canadian Institute of Travel Counsellors (Quebec)
Canadian Public Relations Society (Quebec)
Corporation of Certified General Accountants of Quebec (C.G.A.)
Corporation of Chartered Administrators of Quebec
Corporation of Chartered Appraisers of Quebec
Corporation of Industrial Accountants of Quebec (R.I.A.)
Institute of Canadian Bankers (I.C.B.)
Institute of Chartered Secretaries and Administrators
Institute of Internal Auditors
Insurance Brokers' Association of the Province of Quebec
International Association of Business Communicators
Montreal Personnel Association
Trust Companies Institute of Canada

FRENCH LANGUAGE REQUIREMENT

The Official Language Act, requiring a working-knowledge of the French language for professionals practicing in Quebec, comes into effect on 1 July 1976.

A pamphlet entitled "French Language Requirements for Professionals in Quebec" is available from the Centre for Continuing Education.

Further information should be obtained from your Corporation.

EXAMINATIONS

An examination is held at the end of each course unless specifically excepted. Please see the General Information section for dates. Students will receive written confirmation of their examination or course results after each term. As the results of each course become available, they will be posted on the notice board in Strathcona Hall by STUDENT NUMBER. Results can NOT be obtained by telephone.

Supplemental Examinations

Supplemental privileges are available to students obtaining a final mark of 40% or more in a course.

Students must write their supplemental examination at the next examination period where the appropriate examination is offered or forfeit their supplemental privileges.

The fee for each supplemental examination attempted is $15, payable to McGill University.

Those students wishing to sit a supplemental must apply in writing or in person at Strathcona Hall, 772 Sherbrooke Street West, at least three weeks prior to the examination period. Proof of eligibility to write a supplemental must be presented at the time of application.

DATE OF FINAL EXAM	DATE OF SUPPLEMENTAL EXAM
Summer 1976	December 1976
December 1976	April/May 1977
April/May 1977	July 1977

Candidates who do not reach a program passing grade on a supplemental examination will be required to repeat the course.

Rereads

See General Information page 8.

Grading System

Unless otherwise noted in the description of an individual course or program, the grading system will be as indicated in Section 3 of the General Information.

LIBRARIES

Full library privileges are available to all registered students at the following locations:

The Howard Ross Library of Management
2nd Floor
Samuel Bronfman Building
1001 Sherbrooke Street West

The McLennan Library
McGill Campus

COURSE INFORMATION

A listing of instructors, text books, buildings and room numbers for all courses will be distributed at time of registration. Please ask for a copy. This list will contain the latest information and will be more accurate about timing of courses than this announcement. It is particularly important that students note that in addition to fifteen regularly scheduled lectures of 2 hours, there will be an additional 6 hours of class time arranged in cooperation with the lecturer.

You should be aware of these demands when you decide to take one or more extra courses. To the extent possible the final timetable will give you the information you need for your individual program timing.

Prerequisites

It is the responsibility of each student to ensure that he has completed the prerequisites listed for the course (or courses) for which he intends to register.

Registration

Students may only register for courses in the registration period immediately prior to the term in which they are held.

Please see General Information Section 3 of this announcement.

REGULATIONS AND PROCEDURES

Please see General Information Section 3 of this announcement.

IT IS THE RESPONSIBILITY OF EACH STUDENT TO READ, UNDERSTAND AND ABIDE BY THE RULES AND PROCEDURES PRINTED IN THIS BOOKLET.

McGILL CERTIFICATE PROGRAMS

Admission

Candidates normally will be CEGEP graduates or mature students.

Conditions

All McGill Certificate programs require the completion of 48 credits within a period of seven years. The registration form requires students to state the program they intend to complete. The period allowed for completion will be calculated from this registration date. Courses taken before 1976/77 will be counted towards a students program within the intent of the 7 years completion requirement.

COOPERATIVE PROGRAMS

Membership in the association cooperating with McGill in offering some of these programs is recommended and in some cases required for students proceeding towards the designation offered by the association. For credit towards McGill Certificates in Management, a minimum mark of 55% in each course is required as noted in the section on Examinations. Students must know the regulations of their association, especially with regard to pass/fail marks and other examination conditions.

CONVOCATION

Students who plan to complete the requirements for a Certificate in Management in the Spring of 1977 may obtain an application to graduate from the Centre for Continuing Education. Students should list the courses completed, the year and the marks obtained. Please state the certificate for which the application is being made and enclose a cheque for $5.00 payable to McGill University.

Applications must reach the Centre before 31 March 1977. Applications received after that date must be accompanied by a cheque for $10.00.

Certificates will be awarded at the Spring Convocation of the Centre for Continuing Education, usually held in early June.

COURSE EVALUATIONS

The Centre seeks continuous feedback from its students about the courses offered. To this end students are expected to evaluate their courses each term.

COUNSELLING

Certain associations will be available for consultation during registration (16 August to 20 August 1976 and 3 January to 7 January 1977) but there will be no academic counselling during the registration periods. Further information and help in course choice is available by calling 392-6704.

McGILL CERTIFICATE IN MANAGEMENT REQUIREMENTS

TO HELP YOU LOCATE THE COURSE DESCRIPTION, THE NUMBER IN BRACKETS BESIDE A COURSE TITLE REFERS TO THE SECTION ON COURSE DESCRIPTIONS COMMENCING ON PAGE 126.

McGILL CERTIFICATE IN MANAGEMENT (Administration)

Students may qualify for the McGill Certificate by completing 24 credits from the B.Com. Primary Core, page 110 plus 24 credits from the credit courses offered by the Centre for Continuing Education for a total of 48 credits.

McGILL CERTIFICATE IN MANAGEMENT (Appraisal of Real Estate)

Students may qualify for the McGill Certificate by completing the following program (a total of 48 credits):

36 Credits as follows: *Credits*

(65)	Appraisal of Real Estate I	6
(66)	Appraisal of Real Estate II	6
(67)	Appraisal of Real Estate III	6
(1)	Introduction to Financial Accounting	3
(6)	Introduction to Management Accounting	3
(50)	Statistics I	3
(51)	Statistics II	3
(33)	Marketing Management I	3
(47)	Mathematics of Finance	3

12 credits from:

(55)	Principles of Economics I (Macro)	3
(56)	Principles of Economics II (Micro)	3
(83)	Land Economics	3
(74)	Shopping Centres and Downtown Retail Locations	3
(21)	Communication Skills for Managers	3
(22)	Management Information Systems	3
(82)	Building Construction and Cost Estimating	3
(52)	Law I	3
(16)	Introduction to Organizational Behaviour	3
(34)	Marketing Research	3

McGILL CERTIFICATE IN MANAGEMENT (Banking)

Students may qualify for the McGill Certificate by completing 36 credits from the B.Com. Primary Core plus 12 credits from the program of the Institute of Canadian Bankers (a total of 48 credits).

McGILL CERTIFICATE IN MANAGEMENT (Business Communications)

Students may qualify for the McGill Certificate by completing 48 credits as follows:

18 credits as follows: *Credits*

(63)	A Practical Course in Public Relations Management I	3
(64)	A Practical Course in Public Relations Management II	3
(61)	Internal Communications Management I	3
(62)	Internal Communications Management II	3
(16)	Introduction to Organizational Behaviour	3
(42)	Business Administration I	3

15 credits from:

(15)	Social Psychology	3
(18)	Group Dynamics and Interpersonal Relations	3
(21)	Communication Skills for Managers	3
(33)	Marketing Management I	3
(34)	Marketing Research	3
(37)	Advertising Management	3
(43)	Business Administration II	3
(70)	Effective Speaking and Speech Preparation	3

6 credits from the B. Com. Primary Core — excluding those mentioned above 6

9 credits freely chosen from the Centre's calendar (see list of suggested courses on page 147). 9

McGILL CERTIFICATE IN MANAGEMENT (Insurance Brokerage)

Students may qualify for the McGill Certificate by completing 48 credits as follows:

18 credits as follows: *Credits*

(68)	General Insurance I (Brokers)	6
(81)	General Insurance II (Brokers)	6
(52)	Law I	3

(53)	Law II	3

12 credits from:

(1)	Introduction to Financial Accounting	3
(2)	Financial Accounting I	3
(33)	Marketing Management I	3
(55)	Principles of Economics I (Macro)	3
(56)	Principles of Economics II (Micro)	3

18 credits from:

(50)	Statistics I	3
(51)	Statistics II	3
(21)	Communication Skills for Managers	3
(47)	Mathematics of Finance	3
(80)	International Business	3
(45)	Business Strategy	3
(44)	Management Policy	3
(18)	Group Dynamics & Interpersonal Relations	3
(16)	Introduction to Organizational Behaviour	3
(29)	Finance II	3
(15)	Social Psychology	3
(19)	Personnel Administration	3
(34)	Marketing Reasearch	3
(35)	Marketing Planning I	3
(36)	Marketing Planning II	3

1 other 3 credit course from this Department (course descriptions starting on page 126). 3

McGILL CERTIFICATE IN MANAGEMENT (Marketing)

Students may qualify for the McGill Certificate by completing 48 credits as follows:

12 credits as follows:		*Credits*
(15)	Social Psychology	3
(16)	Introduction to Organizational Behaviour	3
(32)	Marketing Management I & II	6

12 credits from the B. Com. Primary Core 12

24 credits from:

(74)	Shopping Centres and Downtown Retail Locations	3
(75)	Professional Selling	6
(37)	Advertising Management	3
(35)	Marketing Planning I	3
(36)	Marketing Planning II	3
(40)	Sales Management	3
(34)	Marketing Research	3
(39)	Industrial Marketing	3
(41)	Physical Distribution	3
(77)	Quantitative Analysis for Marketing Decisions	3

Students enrolled in the B. Com. degree program must take the Marketing core course (Marketing Management I or Marketing Management I & II) prior to taking other elective Marketing courses.

Other students may take Marketing electives without the introductory core course unless otherwise stated in the course description.

McGILL CERTIFICATE IN MANAGEMENT (Systems Design)

Students may qualify for the McGill Certificate by completing 48 credits as follows:

27 credits as follows:		*Credits*
(22)	Management Informations Systems	3
(24)	Introduction to Systems Innovation I	3

(25)	Introduction to Systems Innovation II	3
(26)	Internal Controls and Systems Design	3
(27)	Systems Project Management	3
(73)	Data Administration	3
(71)	Systems Innovation Workshop I	3
(72)	Systems Innovation Workshop II	3
(79)	Operations Research I	3

15 credits as follows:

(1)	Introduction to Financial Accounting	3
(6)	Introduction to Management Accounting	3
(16)	Introduction to Organizational Behaviour	3
(21)	Communication Skills for Managers	3
(42)	Business Administration I	3

6 credits from:

Any of the credit courses from this Department (course descriptions starting on page 126)	6

Courses Recommended

(23)	Computer Based Information Systems	3
(78)	Production and Operatons Management	3

Students should recognize that not every course can be offered every year. Further information on student program planning can be obtained by discussing this with the Systems Management Advisers. Students who are partly through their program should consult with these advisers on how to complete their programs (phone no.: 392-6704).

McGILL CERTIFICATE IN MANAGEMENT (Transportation)

Students may qualify for the McGill Certificate by completing the following program of 48 credits:

27 credits as follows:		*Credits*
(1)	Introduction to Financial Accounting	3
(6)	Introduction to Management Accounting	3
(41)	Physical Distribution	3
(58)	Transportation Economics	6
(54)	Transportation Law and Government Regulations	6
(44)	Management Policy	3
(46)	Transportation Policy	3
15 credits from the B. Com. Primary Core courses		15
6 credits from this Department (course descriptions starting on page 126) The course recommended below may also be included.		6

Course Recommended

Canadian Economic Geography (See Liberal Arts Department page 78)	3

Students considering completing this McGill Certificate in Management should note the program offered by the C.I.T.T. on page 115. In general, completion of Traffic & Transportation I & II will enhance the student's development in the industry and enrich his academic training in the Certificate.

BACHELOR OF COMMERCE FOR PART-TIME STUDENTS

The B. Com. program for part-time students in the Faculty of Management has been designed to be of assistance to those students who, for various reasons, cannot attend the university during the daytime. The evening courses are offered during the fall, winter and summer.

The courses listed below offered by the Centre for Continuing Education are accepted with the credit shown by the Faculty of Management. All students accepted into the B. Com. for part-time students must obtain a course approval form and present it when registering with the Centre for Continuing Education.

All students will be advised and have their programs approved by the Faculty of Management. The courses will only be part of a degree program if you have been accepted by the Faculty of Management.

All correspondence and enquiries should be addressed to Miss Brenda E. Martin, Supervisor, Part-time Programs, Faculty of Management, McGill University, 1001 Sherbrooke St. W., Montreal, Quebec H3A 1G5. (Telephone: 392-5938)

Each student will be required to complete *42 credits* of Bachelor of Commerce Primary Core material as listed below.

Primary Core Courses

		Credits
(1)	Introduction to Financial Accounting	3
ΨΨ(48)	Survey of Basic Mathematics I	3
	and	
(49)	Survey of Basic Mathematics II	3
(28)	Finance I	3
(22)	Management Information Systems	3
(57)	Managerial Economics	3
(33)	Marketing Management I	3
	or	
ΨΨ(32)	Marketing Management I & II	6
(16)	Introduction to Organizational Behaviour	3
(17)	Organizational Theory	3
	or	
(44)	Management Policy	3
(79)	Operations Research I	3
(55)	Principles of Economics I (Macro)	3
(56)	Principles of Economics II (Micro)	3
(15)	Social Psychology	3
(50)	Statistics I	3
(51)	Statistics II	3

Secondary Core Courses

Students will choose *12 credits* from the list below.

(6)	Introduction to Management Accounting	3
(52)	Law I	3
(53)	Law II	3
(97)	Business and Society (not offered in 1976/77)	3
(29)	Finance II	3
(59)	Introduction to Industrial Relations	3
(80)	International Business	3
Ψ(32)	Marketing Management I & II	6
Ψ(17)	Organizational Theory	3
Ψ(44)	Management Policy	3

Ψ The student is required to choose *either* one of these courses to fulfil the Primary Core requirements; if he wishes to complete both of these courses, three credits will count towards his Primary Core and the other three credits will apply to his Secondary Core requirements.

ΨΨ This course will count only 3 credits towards a B. Com. primary core, the other 3 credits being applied to B. Com. secondary core or elective.

Students must complete the primary and secondary core courses towards the B. Com. and with their adviser choose appropriate electives from the following list:

B. COM. ELECTIVE COURSES		*Credits*
(2)	Financial Accounting I	3
(3)	Financial Accounting II	3
(4)	Financial Accounting III	3
(5)	Financial Accounting IV	3
(7)	Management Accounting - Cost Determination and Analysis	3
(8)	Management Accounting - Planning and Control	3
(9)	Management Accounting Control Systems	3
(10)	Management Accounting Cases	3

(11)	An Introduction to Auditing	3
(13)	External Auditing	3
(14)	Taxation I	3
(18)	Group Dynamics and Interpersonal Relations	3
(19)	Personnel Administration	3
(20)	Salary Administration	3
(21)	Communication Skills for Managers	3
(23)	Computer Based Information Systems	3
(24)	Introduction to Systems Innovation I	3
(25)	Introduction to Systems Innovation II	3
(26)	Internal Controls and Systems Design	3
(27)	Systems Project Management	3
(30)	Investments and Portfolio Management	3
(31)	Capital Markets and Institutions	3
(34)	Marketing Research	3
(35)	Marketing Planning I	3
(36)	Marketing Planning II	3
(37)	Advertising Management	3
(38)	Retail Management	3
(39)	Industrial Marketing	3
(40)	Sales Management	3
(41)	Physical Distribution	3
(42)	Business Administration I	3
(43)	Business Administration II	3
(45)	Business Strategy	3
(46)	Transportation Policy	3
(47)	Mathematics of Finance	3
(54)	Transportation Law and Government Regulations	6
(58)	Transportation Economics	6
(60)	Collective Bargaining	3
(69)	Taxation II	3
(71)	Systems Innovation Workshop I	3
(72)	Systems Innovation Workshop II	3
(73)	Data Administration	3
(77)	Quantitative Analysis for Marketing Decisions	3
(76)	Consumer Behaviour	3
(83)	Land Economics	3
(84)	Money and Banking	3
(85)	Government and Business	6

COOPERATIVE PROGRAMS

The following organizations have accepted the Centre's courses as credit towards the completion of their program as follows.

ADMINISTRATIVE MANAGEMENT SOCIETY

To receive recognition from A.M.S. as a Certified Administrative Manager (C.A.M.) (Quebec) students must complete a total of 60 credits from the list below.

Students wishing to obtain the (C.A.M.) (International) Certificate will be required to write the Association's qualifying examination.

The Society offers the annual A.M.S. prize to the student graduating with the highest Grade Point Average.

Special Requirements

1) A minimum of two years' business experience unless specifically exempted.

2) Membership in the Corporate Administrative Managers of Quebec. For particulars write: Mr. H.N. Black, Domtar Ltd. P.O. Box 7210, Montreal, Quebec H3C 3M1. (Tel.: 282-5431)

List of Courses

		Credits
(16)	Introduction to Organizational Behaviour	3

(19)	Personnel Administration	3
(21)	Communication Skills for Managers	3
(18)	Group Dynamics and Interpersonal Relations	3
(15)	Social Psychology	3
(17)	Organizational Theory	3
(1)	Introduction to Financial Accounting	3
(6)	Introduction to Management Accounting	3
(28)	Finance I	3
(29)	Finance II	3
(55)	Principles of Economics I (Macro)	3
(56)	Principles of Economics II (Micro)	3
(50)	Statistics I	3
(51)	Statistics II	3
(32)	Marketing Management I and II	6
(22)	Management Information Systems	3
(23)	Computer Based Information Systems	3
(24)	Introduction to Systems Innovation I	3
(25)	Introduction to Systems Innovation II	3
(52)	Law I	3
(53)	Law II	3

APPRAISAL INSTITUTE OF CANADA

The title "Canadian Residential Appraiser" (C.R.A.) will be awarded to students who successfully complete Appraisal I and II, and who have satisfied the membership requirements of the Institute.

The title "Accredited Appraiser Canadian Institute" (A.A.C.I.) will be awarded to students who register with the Institute and follow the requirements as set out by the Institute.

In cooperation with the Centre for Continuing Education, certain lecture courses have been given equivalent status. The following is the list of required courses of the Institute with the corresponding list of equivalent McGill courses.

AIC COURSE	*MCGILL EQUIVALENT*		*Credits*
Appraisal I	(65)	Appraisal of Real Estate I	6
Appraisal II	(66)	Appraisal of Real Estate II	6
Appraisal III	(67)	Appraisal of Real Estate III	6
Economics I	(55)	Principles of Economics I (Macro)	3
		and	
	(56)	Principles of Economics II (Micro)	3
Economics II	(83)	Land Economics	3
Building Construction and Cost Estimating	(82)	Building Construction and Cost Estimating	3
Communications Concepts and Strategies	(21)	Communication Skills for Managers	3
Law	(52)	Law I	3

Further information regarding membership, exemption fees, etc. may be obtained from Mr. David A. Hughes, The Appraisal Institute of Canada, 1400 Sauvé Street West, Suite 279, Montreal, Quebec H4N 1C5 (Tel.: 333-1500).

Students proceeding towards the Institute's requirements will also be fulfilling part of the McGill Certificate in Management (Appraisal of Real Estate) program. See page 106.

ASSOCIATION FOR SYSTEMS MANAGEMENT

The Certificate of the Association for Systems Management is offered by the Montreal Chapter of the Association for Systems Management in cooperation with the Centre for Continuing Education. Qualifications for admission to the program are two years' business experience and at least high school standing. The Certificate is offered by the Association when the student completes the McGill Certificate in Management (Systems Design). See page 108. Student membership in the Association for systems Management is recommended. Further information may be obtained from the Association for Systems Management, Mr. John Frena, Vice-President, Education, Management Systems, McGill University, P.O. Box 6070, Station "A", Montreal, Quebec H3A 3G1. (Telephone: Business: 392-5023; Home: 388-0838.)

CANADIAN ASSOCIATION FOR PHYSICAL DISTRIBUTION MANAGEMENT

This association is interested in education in the Physical Distribution industry. They actively support and guide relevant courses offered through the Centre for Continuing Education. For further information on their aims, educational activities and membership regulations write to: CAPDM, T.C. Bird, Director of Education, P.O. Box 983, Adelaide Street, Postal Station, Toronto, Ontario M5C 2K4. (Telephone: (Moncton, N.B.), 506-855-0038.)

CANADIAN CREDIT INSTITUTE

The Institute in cooperation with the Centre for Continuing Education offers an opportunity for students to take some of the courses leading to the M.C.I. designation. The specialized subjects of Credit Management are, however, only available by correspondence study conducted through the Institute.

Students who wish to follow the courses available through the university program should register with the Institute before enrolling with McGill.

On successfully passing the university examinations in the equivalent subjects in the McGill program, a transcript of marks should be forwarded to the Institute with a request for exemption.

The following is a list of the McGill courses which correspond to those of the Institute:

C.C.I. COURSE	*MCGILL EQUIVALENT*		*Credits*
Accounting	(1)	Introduction to Financial Accounting	3
		and	
	(2)	Financial Accounting I	3
Commercial Law	(52)	Law I	3
		and	
	(53)	Law II	3
Quebec Civil Code	(52)	Law I	3
Economics	(55)	Principles of Economics I (Macro)	3
		and	
	(56)	Principles of Economics II (Micro)	3
Marketing	(32)	Marketing Management I and II	6
Business Administration	(42)	Business Administration I	3
		and	
	(16)	Introduction to Organizational Behaviour	3

Further information regarding membership, exemption fees, etc. may be obtained from: Miss H.R. Witte, Montreal Chapter, The Canadian Credit Institute, P.O. Box 631, Station "A" Montreal, Quebec H3C 2T8, (Telephone: 270-7111).

CANADIAN INSTITUTE OF MANAGEMENT

The Canadian Institute of Management through the Centre for Continuing Education offers a program of management development leading to the Certificate in Management and Administration (C.I.M.).

Purpose

The purpose of this program is to increase the effectiveness of middle and senior managers employed in the industrial, service, and governmental sectors of the economy. This program is based on management development needs identified through research sponsored by the Institute.

Membership Requirements

Students who qualify for membership in the Canadian Institute of Management must register with the Institute. Students will not be given credit for courses taken prior to membership.

Members may transfer with full credits to any city across Canada where C.I.M. courses are offered. The criteria for admission to the program are:

1) Grade 12 education (or equivalent), a minimum age of 24 years and a minimum of 2 years supervisory or 4 years staff experience.
   or
2) Higher than Grade 12, a minimum age of 23 years and a minimum of 2 years supervisory or 4 years staff experience.
   or
3) Community College Graduate in Management Sciences, a minimum age of 22 years.
   or
4) University Graduate.

FEES

The student membership fee is $50.00 per year, and is payable to the Canadian Institute of Management. An additional charge of $15.00 is required for students accepted for Alternate exams.

Further information may be obtained from: The Canadian Institute of Management, P.O. Box 1238, Station "B", Montreal, Quebec H3B 3K3, (Telephone: 845-6612).

PROGRAM

A new C.I.M. program consisting of six core courses and two option courses was introduced two years ago. Students presently enrolled may continue as originally planned while the new program is being phased in. Ask for the special booklet giving details, available from the Centre or from the Institute.

An examination is held at the end of each Institute Core course. Students who are unable to write that exam because of health or business reasons may apply for permission to write an Alternate exam. This applies only to the core courses.

Students may qualify for the Certificate in Management and Administration (C.I.M.) by completing the following program:

Year I		*Core Courses*
Section A	(89)	Organization as Systems
Section B	(90)	Managerial Accounting
Year II		*Core Courses*
Section A	(91)	Quantitative Information for Decisions
Section B	(92)	Organizational and Human Behaviour
Year III		*The Option Year*

Students successfully completing Year I and II will complete two option courses in their third year.

Year IV		*Core Courses*
Section A	(93)	Management of Human Resources
Section B	(94)	Cases and Problems in Administration

THE OPTION YEAR

Each option course will count as one credit towards the C.I.M. Certificate and may be selected from any credit course offered by the Management Undergraduate Department of the Centre provided it does not repeat core course material and for which the student has the required prerequisites.

Optional courses must be approved in advance by C.I.M. National Office. Permission to register for an option course should be requested by writing to C.I.M. Montreal Branch, Director of Education, Mr. B.M. Boysen, C.I.M., 668 Victoria Drive, Baie D'Urfe, P.Q. H9X 2J8, at least three weeks prior to registration.

SUGGESTED OPTION COURSES ARE

		Credits
(15)	Social Psychology	3
(16)	Introduction to Organizational Behaviour	3
(17)	Organizational Theory	3
(19)	Personnel Administration	3
(21)	Communication Skills for Managers	3
(22)	Management Information Systems	3
(28)	Finance I	3
(33)	Marketing Management I	3
(41)	Physical Distribution	3

(59)	Introduction to Industrial Relations	3
(78)	Production and Operations Management	3

CANADIAN INSTITUTE OF TRAFFIC AND TRANSPORTATION

The Canadian Institute offers a program of professional development in Transportation and Distribution Management which on completion entitles a candidate to membership in the Institute and the use of the designation C.I.T.T.

The first two full year courses are offered on the McGill Campus by the Institute. (See page 144). (No exemptions are allowed for these two courses.)

The final three levels are offered in cooperation with the Centre's University level programs and are as follows:

Students must complete the following 24 credits:

MANDATORY INSTITUTE SUBJECTS	*McGILL EQUIVALENTS*		*Credits*
Commercial Law	(52)	Law I	3
		and	
	(53)	Law II	3
English		English Composition (684-351X Language section, see page 64)	3
		and	
	(21)	Communication Skills for Managers	3
Introductory Economics	(55)	Principles of Economics I (Macro)	3
		and	
	(56)	Principles of Economics II (Micro)	3
Transportation Economics	(58)	Transportation Economics	6

Students must complete 12 credits from the options listed below:

OPTIONAL INSTITUTE SUBJECTS	*McGILL EQUIVALENTS*		
Accounting	(1)	Introduction to Financial Accounting	3
		and	
	(6)	Introduction to Management Accounting	3
Business Organization	(42)	Business Administration I	3
		and	
	(43)	Business Administration II	3
Business Statistics	(50)	Statistics I	3
		and	
	(51)	Statistics II	3
Canadian Geography		Canadian Economic Geography (674-505 Y 56 Offered January 1977, see page 78)	3
Human Relations in Business	(15)	Social Psychology	3
		and	
	(16)	Introduction to Organizational Behaviour	3
International Economics	(80)	International Business	3
		One other course in this subject area with approval	3
Managerial Economics	(57)	Managerial Economics	3
		and	
	(44)	Management Policy	3
		or	
	(46)	Transportation Policy (This course may be substituted for Management Policy only).	3
Marketing	(33)	Marketing Management I	3
		and	
	(34)	Marketing Research	3

Mathematics for Management	(41)	Physical Distribution	3
		and	
	(77)	Quantitative Analysis for Marketing Decisions	3
		or	
	(48)	Survey of Basic Mathematics I	3
		and	
	(49)	Survey of Basic Mathematics II	3
		(These courses may be substituted for Quantitative Analysis for Marketing Decisions)	3
Organizational Behaviour	(17)	Organizational Theory	3
		and	
	(18)	Group Dynamics and Interpersonal Relations	3

Further information may be obtained from: Canadian Institute of Traffic and Transportation, 44 Victoria Street, Suite 2120 Toronto, Ontario M5C 1Y2 Attention: Ms. B.A. Parkin, (Telephone: (416) 363-5696)

CANADIAN INSTITUTE OF TRAVEL COUNSELLORS

See course 88.

CANADIAN PUBLIC RELATIONS SOCIETY

See Courses 63 and 64.

CORPORATION OF CERTIFIED GENERAL ACCOUNTANTS OF QUEBEC

The Centre for Continuing Education in cooperation with the Corporation of Certified General Accountants of Quebec offers the following program towards the designation Certified General Accountant (C.G.A.)

Students who wish to follow the program must register with the Corporation. Further information regarding training may be obtained from the Professional Corporation of Certified General Accountants of Quebec, 5165 Queen Mary Road, Suite 512, Montreal, Quebec H3W 1X9. (Telephone: 487-3544)

The Corporation conducts its own mandatory examinations in February and June and requires that candidates must have previously passed or been granted credit by the university and the corporation for the courses shown below. *Mandatory examination signifies* the corporation examinations.

CGA COURSE	*MCGILL EQUIVALENT*		*Credits*
LEVEL I			
Accounting Principles 101	(1)	Introduction to Financial Accounting	3
		and	
	(2)	Financial Accounting I	3
Law 108	(52)	Law I	3
		and	
	(53)	Law II	3
LEVEL II			
Financial Accounting 221	(3)	Financial Accounting II	3
Managerial Mathematics 202	(47)	Mathematics of Finance	3
Statistics 203	(50)	Statistics I	3
LEVEL III			
Cost Accounting 311	(7)	Management Accounting — Cost Determination and Analysis	3
		and	
	(8)	Management Accounting — Planning and Control	3
Economics 304	(55)	Principles of Economics I (Macro)	3
		and	
	(56)	Principles of Economics II (Micro)	3
Information and Computer Systems 315	(22)	Management Information Systems	3

LEVEL IV

Advanced Accounting 401	(4)	Financial Accounting III	3
Auditing Procedures 417	(11)	An Introduction to Auditing	3
Income Tax 409 (MANDATORY EXAMINATION (old program))	(14)	Taxation I	3

LEVEL V

Organizational Behaviour 500	(16)	Introduction to Organizational Behaviour (3 credits)	

Students Complete Organizational Behaviour and one set of 4 options listed below:

			General Financial Accounting	Controller Ship	Taxation	Public Auditing
Specialized Accounting 501 (MANDATORY EXAMINATION)	(5)	Financial Accounting IV (3 credits)	X	X		
Financial Controllership 516 (MANDATORY EXAMINATION)	(28)	Finance I (3 credits)	X	X	X	X
Managerial Auditing 557 (MANDATORY EXAMINATION)	(12)	Operational Auditing (3 credits)	X	X		X
Managerial Policy 600 (MANDATORY EXAMINATION)	(44)	Management Policy (3 credits)	X		X	
Advanced Finance 616 (MANDATORY EXAMINATION)	(29)	Finance II (3 credits)		X		
Advanced Income Tax 509 (MANDATORY EXAMINATION)	(69)	Taxation II (3 credits)				
Advanced Auditing 517 (MANDATORY EXAMINATION)	(13)	External Auditing (3 credits)			X X	X X

CORPORATION OF CHARTERED ADMINISTRATORS OF QUEBEC

This Corporation admits to membership holders of a Bachelor of Commerce with a major in a functional area. Students completing the Bachelor of Commerce for part-time students in the Centre for Continuing Education, Faculty of Management will be eligible to become a Chartered Administrator of Quebec. For further information on their aims, educational activities and membership regulations write to: Mr. Andre Tanguay, Administrateur Général, The Professional Corporation of Chartered Administrators of Quebec, 360 est, Boulevard Charest, Québec, Québec G1K 3H4 (Telephone: 418 - 523-4068)

CORPORATION OF CHARTERED APPRAISERS OF QUEBEC

In cooperation with the Corporation of Chartered Appraisers of Quebec, the Centre for Continuing Education offers courses leading to this professional recognition. Successful candidates, upon completion of all requirements of the Corporation, will be allowed to use the title C. App. (Chartered Appraiser) or E.A. (Evaluateur Agréé).

The academic requirements of the Corporation of Chartered Appraisers of Quebec are a Bachelor of Commerce degree with a major in Real Estate Appraisal. Students may meet these requirements by completing:

1). A B.Com. *and* the required concentration in Real Estate listed below or its equivalent.
or
2). The concentration courses listed below and then continuing to complete a B.Com. in the part-time program.

The required courses making up the major in Real Estate Appraisal are available through the Centre for Continuing Education and are as follows:

McGILL Course		Credits
(65)	Appraisal of Real Estate I	6
(66)	Appraisal of Real Estate II	6
(67)	Appraisal of Real Estate III	6
(83)	Land Economics	3
(47)	Mathematics of Finance	3
(21)	Communication Skills for Managers	3
(82)	Building Construction and Cost Estimating	3
(52)	Law I	3

Further information on membership, regulation, course recognition, etc. is available through: Mr. Gilles Dion, Directeur-administratif, Corporation Professionnelle des Evaluateurs Agréés du Québec, Place du Canada, Montreal, Quebec H3B 2N2. (Telephone: 861-9729)

CORPORATION OF INDUSTRIAL ACCOUNTANTS OF QUEBEC

The Centre for Continuing Education in cooperation with the Corporation of Industrial Accountants of Quebec offers the following program towards the designation Registered Industrial Accountant (R.I.A.).

Students who wish to follow this program must register with the Corporation. Information regarding the regulations for professional experience requirements and training may be obtained from: The Corporation of Industrial Accountants of Quebec, 1509 Sherbrooke Street West, Suite 15, Montreal, Quebec H3G 1L7 (Telephone 931-2509).

The Corporation of Industrial Accountants of Quebec conducts its own qualifying examinations for the diploma of Registered Industrial Accountant (R.I.A.). The corporation has adopted a policy of granting exemption from some of their examinations to students who successfully complete equivalent courses in the McGill program. The remaining Corporation examinations must be written by all students after satisfactory completion of the appropriate McGill course.

The Corporation conducts its own mandatory examinations in January and May. The word MANDATORY in the following tables signifies the corporation examinations.

R.I.A. PROGRAM 1976/77

Students should follow the sequence of courses in the levels as noted

R.I.A. COURSE	LEVELS 1	2	3	4	5	McGILL EQUIVALENTS
ACCOUNTING						
Principles of Accounting	X					(1) Introduction to Financial Accounting and (2) Financial Accounting I
Accounting Theory and Problems		X				(3) Financial Accounting II
Accounting for Cost Determination, Analysis and Control			X			(7) Management Accounting — Cost Determination and Analysis
Accounting for Management Planning and Control (MANDATORY EXAMINATION)				X		(8) Management Accounting — Planning and Control
Selected Topics and Contemporary Issues in Accounting (MANDATORY EXAMINATION)				X		(4) Financial Accounting III
ENVIRONMENTAL STUDIES						
Introductory Economics	X					(55) Principles of Economics I (Macro) and (56) Principles of Economics II (Micro)
Organizational Behaviour		X				(15) Social Psychology and (16) Introduction to Organizational Behaviour
LEGAL ASPECTS OF BUSINESS						
Commercial Law		X				(52) Law I
Taxation		X				(14) Taxation I
FINANCE AND AUDITING						
Financial Management				X		(28) Finance I
Operational Auditing					X	(11) Introduction to Auditing and (12) Operational Auditing
COMPUTERS AND SYSTEMS						
Data Processing, Equipment and Programming	X					(22) Management Information Systems
Information Systems: Analysis Design and Implementation					X	(23) Computer Based Information Systems
QUANTITATIVE METHODS						
Business Mathematics	X					(47) Mathematics of Finance
Quantitative Methods I			X			(48) Statistics I
Quantitative Methods II			X			(49) Statistics II
MANAGEMENT						
Management: Processes and Problems (Case Analysis) (MANDATORY EXAMINATION)					X	(9) Management Accounting Control Systems and (10) Management Accounting Cases

Communication Skills for Managers is not required by strongly recommended particularly for improving performance on the mandatory examination — Management: Processes and Problems

INSTITUTE OF CANADIAN BANKERS

The Centre for Continuing Education in cooperation with the Institute of Canadian Bankers offers the following programs towards the designation FICB Fellow of the Institute of Canadian Bankers and a program of Continuing Education for Bankers who already have their FICB.

The Institute sponsors programs designed specifically for staff members of Canadian banks. Its purpose is to cooperate with universities in providing formal education for men and women who wish to prepare themselves for responsible positions in banking.

Further details may be obtained from: The I.C.B. Co-ordinator, Suite 3920, Place Victoria, P.O. Box 9, Stock Exchange Tower, Montreal, Quebec H4Z 1A3 (Telephone: 878-3148).

The Institute of Canadian Bankers will recognize many electives at universities across Canada. McGill will not offer all these electives in 1976-1977. Students who wish to take any other option than those listed below must obtain permission from the I.C.B. Registrar prior to the university registration date.

Fellow of the Institute of Canadian Bankers (FICB).

ICB students should complete the FICB Core Courses below and choose 18 credits from the list of ICB Optional Courses. No more that 12 credits from any one section may be taken.

Continuing Education Program for FICB's.

In order to complete the Continuing Education Program for FICB's, students who have already obtained their FICB may continue to select courses that they have not already taken from the list of ICB Optional courses below.

Diplomas are offered in 1) Finance and Accounting, 2) Human Resources Management, 3) Economics, 4) Marketing, 5) Quantitative Methods. These will be awarded on completion of a minimum of 18 credits from one stream plus 12 further credits from the same stream or any other stream. ICB offers also a Diploma in International Studies and one in General Management. Further information and final program approval must be obtained from the ICB Registrar.

ICB Core Courses	*McGill Equivalents*		*Credits*
Fundamentals of Accounting	(1)	Introduction to Financial Accounting	3
		and	
	(6)	Introduction to Management Accounting	3
Business Administration	(42)	Business Administration I	3
		and	
	(43)	Business Administration II	3
Communications	(16)	Introduction to Organizational Behaviour	3
		and	
	(18)	Group Dynamics & Interpersonal Relations	3
Economics	(55)	Principles of Economics I (Macro)	3
		and	
	(56)	Principles of Economics II (Micro)	3
Financial Accounting	(2)	Financial Accounting I	3
		and	
	(3)	Financial Accounting II	3
Marketing	(32)	Marketing Management I & II	6
		or	
	(33)	Marketing Management I	3
		and	
	(34)	Marketing Research	3
Business Strategy	(45)	Business Strategy	3
		and	
	(44)	Management Policy	3

ICB Optional Courses	*McGill Equivalents*		
MANAGEMENT OF FINANCIAL RESOURCES			
Business Finance	(28)	Finance I	3
		and	

	(29)	Finance II	3
Management Accounting	(7)	Management Accounting — Cost Determination and Analysis	3
		and	
	(8)	Management Accounting — Planning & Control	3
Taxation	(14)	Taxation I	3
		and	
	(69)	Taxation II	3
Management Information Systems	(22)	Management Information Systems	3
		and	
	(23)	Computer Based Information Systems	3
Investment Management	(30)	Investments and Portfolio Management	3
Financial Institutions	(31)	Capital Markets and Institutions	3
Financial Management	(—)	Applied Corporate Finance (Not Offered)	—
International Banking & Finance	(—)	International Financial Management (Not Offered)	—

MANAGEMENT OF HUMAN RESOURCES

Organizational Behaviour	(15)	Social Psychology	3
Employee Relations	(59)	Introduction to Industrial Relations	3
		and	
	(60)	Collective Bargaining	3
Personnel Management	(19)	Personnel Administration	3
		and	
	(20)	Salary Administration	3
Organizational Design and Development	(17)	Organizational Theory	3
Organizational Behaviour in a Multinational Enterprise	(—)	No Equivalent	—
Personal Growth and Career Development	(—)	No Equivalent	—
Management of Organizational Change	(—)	Strategies of Organizational Development (Not Offered)	—

ECONOMICS

Money and Banking	(84)	Money and Banking	3
Contemporary Intermediate Economics	(57)	Managerial Economics	3
Contemporary Economic Issues	(—)	Current Economic Problems (Not Offered)	—
International Economics	(—)	International Economics Since 1850 (Not Offered)	—

GENERAL

Business Law	(52)	Law I	3
		and	
	(53)	Law II	3
International Business	(80)	International Business	3
Business and Government	(85)	Government and Business	6

MARKETING

Consumer Behaviour	(76)	Consumer Behaviour	3
		and	
	(38)	Retail Management	3
Marketing Management	(—)	No Equivalent	—
Marketing Communications	(37)	Advertising Management	3
International Marketing	(—)	International Marketing Management (Not Offered)	—
Marketing Research	(77)	Quantitative Analysis for Marketing Decisions	3

Sales Management	(40)	Sales Management	3
Marketing Planning Strategy	(35)	Marketing Planning I	3
	(36)	Marketing Planning II	3
QUANTITATIVE METHODS			
Business Statistics	(50)	Statistics I	3
		and	
	(51)	Statistics II	3
Operations Research I Methodology	(79)	Operations Research	3
Operations Research II Application	(78)	Production & Operations Management	3
Computer Concepts and Applications	(24)	Introduction to Systems Innovation I	3
		and	
	(25)	Introduction to Systems Innovation II	3
Mathematical Programming	(—)	No Equivalent	—

INSTITUTE OF CHARTERED SECRETARIES AND ADMINISTRATORS

The Institute in cooperation with the Centre for Continuing Education offers an opportunity for students to take some of the courses leading to the international title "Chartered Secretary". (A.C.I.S. designation).

Further information on examinations, exemptions and application for courses offered through ICSA may be made through: The Institute of Chartered Secretaries and Administrators, c/o Board of Trade, 1080 Beaver Hall Hill, Montreal, Quebec H2Z 1S9. Attention: Miss Campbell (Telephone: 878-4651)

Although membership is not mandatory throughout the study period, individuals must be registered students of the Institute for at least twelve (12) weeks before applying to sit any ICSA examination.

The following is a list of the McGill courses which correspond to those of the Institute and are accepted by the Institute without further examination.

The International title may be obtained by following the Business Administration or Public Administration requirements as follows:

BUSINESS ADMINISTRATION

Group A — Entrance Qualifications

ICSA Course		*McGill Equivalents*	*Credits*
1. Principles of Economics	(55)	Principles of Economics I (Macro)	3
		and	
	(56)	Principles of Economics II (Micro)	3
2. Principles of Law	(52)	Law I	3
3. Principles of Accounting	(1)	Introduction to Financial Accounting	3
		and	
	(2)	Financial Accounting I	3
4. Principles of Administration	(16)	Introduction to Organizational Behaviour	3
		and	
	(42)	Business Administration I	3

Group B — Creative Management

5. Decision-Making		Offered by ICSA	
6. Management-Accounting	(6)	Introduction to Management Accounting	3
and		and	
Financial Analysis or	(28)	Finance I or	3
Statistics	(50)	Statistics I	3
7. Managerial Economics	(57)	Managerial Economics	3
8. Management of Human Resources or	(18)	Group Dynamics and Interpersonal Relations	3
		and	

	(19)	Personnel Administration or	3
Taxation	(14)	Taxation I	3

Group C — The Role of the Administrator

9. Commercial Law	(52)	Law I	3
		and	
	(53)	Law II	3
10. Company Law	(53)	Law II	3
11. Meetings — Law & Procedures		Offered by ICSA	
12. Company Secretarial Practice		Offered by ICSA	

PUBLIC ADMINISTRATION

Group A — Entrance Qualifications: Same as Group A — Business Administration

Group B — Creative Management

5. Decision-Making		Offered by ICSA	
6. Public Finance		Offered by ICSA	
or			
Local Government Accounting		Offered by ICSA	
7. Management Economics	(57)	Managerial Economics	3
8. Management of Human Resources	(18)	Group Dynamics and Interpersonal Relations	3
		and	
	(19)	Personnel Administration	3

Group C — The Role of the Administrator

9. Political Science		Offered by ICSA	
or			
Law of Local Government I		Offered by ICSA	
10. Commercial Law	(52)	Law I	3
		and	
	(53)	Law II	3
11. The Legislative Framework		Offered by ICSA	
or			
Law of Local Government II		Offered by ICSA	
12. Public Meetings		Offered by ICSA	
or			
Municipal Secretarial Practice		Offered by ICSA	

INSTITUTE OF INTERNAL AUDITORS

The Centre for Continuing Education in cooperation with the Institute of Internal Auditors offers the following program of courses leading to the title Certified Internal Auditor (C.I.A.). The Institute conducts its own two day examinations in four parts to be held in September, 1976 and in May 1977 in subsequent years. The four parts are as follows:

Part I, Principles of Internal Auditing; Part II, Internal Audit Techniques; Part III, Principles of Management; Part IV, Disciplines Related to Internal Auditing.

Students must take a minimum of two parts of this examination at the first sitting and complete the remainder within three years. In order to be accepted as a candidate by the Institute students should complete the following sequence of courses:

McGill Course		*Credits*
(21)	Communication Skills for Managers	3
(55)	Principles of Economics I (Macro)	3
(1)	Introduction to Financial Accounting	3
(2)	Financial Accounting I	3
(3)	Financial Accounting II	3
(7)	Management Accounting - Cost Determination and Analysis	3
(8)	Management Accounting - Planning and Control	3
(52)	Law I	3

(14)	Taxation I	3
(28)	Finance I	3
(11)	Introduction to Auditing	3
(12)	Operational Auditing	3
(78)	Production and Operations Management	3
(79)	Operations Research I	3
(26)	Internal Controls and Systems Design	3
(44)	Management Policy	3
	One other Operational Auditing course (to be announced)	

Students wishing further information about the examinations, registration, etc. should contact the Institute of Internal Auditors, Montreal Chapter, P.O. Box 1310, Place Bonaventure, Montreal, Quebec H5A 1H1

INSURANCE BROKERS' ASSOCIATION OF THE PROVINCE OF QUEBEC

The Centre for Continuing Education in cooperation with the Insurance Brokers' Association of the Province of Quebec offers two courses leading towards the AIB and CIB designations.

The final examination for (68) General Insurance I is the examination set by the Insurance Brokers' Association of the Province of Quebec for the title of Associate Insurance Broker (AIB).

The final examination for (81) General Insurance II is the examination set by the Insurance Brokers' Association of the Province of Quebec for the title of Chartered Insurance Broker (CIB).

Society examinations are held in April or May. Students should note that the passing grade for these examinations is 60%. These examinations are accepted as a credit towards the McGill Certificate in Management under the normal grading system (see page 7).

Further information on the Associations membership requirements may be obtained from: The Insurance Brokers' Association of the Province of Quebec, 550 Sherbrooke St. West, Suite 1570, Montreal, Quebec H3A 1C8 (Telephone: 842-2591).

INTERNATIONAL ASSOCIATION OF BUSINESS COMMUNICATORS

See Courses 61 and 62.

MONTREAL PERSONNEL ASSOCIATION

This association is interested in education for personnel and industrial relations functions. They actively support and guide relevant courses offered through the Centre for Continuing Education. For further information on their aims, educational activities and membership regulations write to: Miss Madeleine Sénécal, The Montreal Personnel Association, P.O. Box 278, Station "B", Montreal, Quebec H3B 3J7. (Telephone: 861-4426)

TRUST COMPANIES INSTITUTE OF CANADA

The Centre for Continuing Education in cooperation with the Education Division of the Trust Companies Institute of Canada offers accreditation to exponents of various special fields of knowledge essential to modern fiduciary (trust) and financial intermediary business.

The levels of accreditation and their general rationales are as follows:

Associate of The Trust Companies Institute (A.T.C.I.)	— general business education (outlined below) together with a modicum of experience in the trust industry.
Member of The Trust Companies Institute (M.T.C.I.).	— specialized technical learning with commensurate experience and responsibility in the industry.
Fellow of The Trust Companies Institute (F.T.C.I.)	— management theory with commensurate experience and responsibility in the industry.

ASSOCIATE OF THE TRUST COMPANIES INSTITUTE

Associate Level in General Business Education

Compulsory Courses		*McGill Equivalent*	*Credits*
Business Communications	(21)	Communication Skills for Managers	3
Principles of Accounting	(1)	Introduction to Financial Accounting	3
or		or	
Electronic Data Processing (E.D.P.)	(22)	Management Information Systems	3
Business Law	(52)	Law I	3
Principles of Economics	(55)	Principles of Economics I (Macro)	3
Optional Courses			
Any *2* of:			
Money and Banking	(84)	Money and Banking	3
Principles of Business Administration	(42)	Business Administration I	3
or		or	
Organizational Behaviour	(16)	Introduction to Organizational Behaviour	3
Principles of Marketing	(33)	Marketing Management I	3
Management Accounting	(6)	Introduction to Management Accounting	3
or		or	
Business Statistics	(50)	Statistics I	3
Principles of Sociology		Not offered	
or			
Psychology	(15)	Social Psychology	3

The Institute will accept courses taken in other industry programs, eg. C.G.A., R.I.A., F.I.C.B. and courses selected from the general extension program provided the course selected has involved at least 20 hours of classroom instruction and a formal performance appraisal.

For complete details and calendar, contact the Institute directly: The Trust Companies Institute of Canada, Suite 401, Board of Trade Building, 11 Adelaide Street West, Toronto, Ontario. M5H 1L9 Telephone (416) 364-1210.

COURSE DESCRIPTIONS

The following courses (1 — 85) are offered to students following the Centre's programs. The credit weighting of each course is given relative to the Centre's Certificates.

Other courses are offered by the Department but are not included in the Certificate Programs (see courses 86 — 96 for courses offered outside the above programs).

*** Courses marked with an asterisk will be repeated in January 1977.**

See pages 145 to 147 for course listings by subject and by evening and time.

* (1) INTRODUCTION TO FINANCIAL ACCOUNTING (3 credits)

280-212X 50
280-212X 56

DAYS: Mondays 6 - 8 p.m.
Mondays 8 - 10 p.m.
FEE: $85.00
DURATION: 15 lectures - 36 hours beginning 30 August

Accounting concepts and principles; the accounting model and the measurement of accounting income; the balance sheet.

* (2) FINANCIAL ACCOUNTING I (3 credits)

271-311X 61
271-311X 62

DAY: Tuesdays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 lectures - 36 hours beginning 31 August
PREREQUISITE: Introduction to Financial Accounting

A detailed examination of the elements of the income statement and the balance sheet with emphasis on the role of inventories and depreciation.

* (3) FINANCIAL ACCOUNTING II (3 credits)

271-312X 61
271-312X 62

DAY: Tuesdays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 lectures - 36 hours beginning 31 August
PREREQUISITE: Financial Accounting I

Development of accounting theory and practice; a detailed review of the accounting for current and long term assets and liabilities; intangibles and shareholders' equity; the treatment of prior period adjustments and extraordinary items in the determination of accounting income; working capital and flow of funds, financial statement presentation; partnerships.

* (4) FINANCIAL ACCOUNTING III (3 credits)

271-414X 71

DAY: Wednesdays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 lectures - 36 hours beginning 1 September
PREREQUISITE: Financial Accounting II

The underlying concepts & accounting treatment of intercorporate investments, business combinations, purchase & pooling of interests including examination of the professional recommendations. Reorganizations; valuations of business enterprises; branches – domestic & foreign; consignments; installment sales; estate & trust accounting. Accounting for corporate income taxes, price level changes, pensions, leases, human resources & goodwill.

* (5) FINANCIAL ACCOUNTING IV (3 credits)

271-400X 81

DAY: Thursdays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 lectures - 36 hours beginning 2 September
PREREQUISITE: Financial Accounting III

Review and integration of previous courses; specialized accounting including fund accounting; specialized types of operations including banks, insurance companies, municipalities; accounting treatment of price level changes; contemporary financial accounting issues and developments.

* (6) INTRODUCTION TO MANAGEMENT ACCOUNTING (3 credits)

271-220X 51

DAY: Mondays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 lectures - 36 hours beginning 30 August
PREREQUISITE: Introduction to Financial Accounting

An overview of Management Accounting designed to introduce the manager to the use of accounting reports and concepts in decision making; a general review of the various methods of accounting for costs and their analysis for decision making purposes; an introduction to budgeting for planning and control.

* (7) MANAGEMENT ACCOUNTING - COST DETERMINATION AND ANALYSIS (3 credits)

271-313X 81
271-313X 82

DAY: Thursdays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 lectures - 36 hours beginning 2 September
PREREQUISITE: Financial Accounting II

Conceptual framework of management accounting. Cost determination and analysis: Cost concepts and terminology, measurement and accumulation of costs. Accounting for management control: Job order costs and cost control, variance analysis, process costing, spoilage, waste, defective units, joint and by - product costing. Accounting for man-

agement planning: Operation budgeting and co-ordination of plans, models for budgeting, introduction to D.C.F., budget simulation, pro forma financial statements, cost behaviour and flexible budgets.

(8) MANAGEMENT ACCOUNTING - PLANNING AND CONTROL (3 credits)

271-415Y 81

DAY: Thursdays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 lectures - 36 hours beginning 13 January 1977
PREREQUISITE: Management Accounting - Cost Determination and Analysis

Decision models and their relationship to planning and control; certainty and uncertainty, determination of cost behaviour patterns, cost control, analysis of variances, cost accounting and quantitative techniques; preparation and use of budgets, behavioural input of budgets, simulation of operating budgets; decentralization and measurement of performance, transfer pricing.

(9) MANAGEMENT ACCOUNTING CONTROL SYSTEMS (3 credits)

271-421X 91

DAY: Fridays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 lectures - 36 hours beginning 10 September
PREREQUISITE: Management Accounting - Planning and Control

A case method course emphasizing written and oral analysis of management control system problems. Subtopics include the identification of the key success factors of a business, the selection of suitable responsibility centres, transfer pricing, and the management control system as means of motivating and evaluating managers. Special emphasis will be placed on the use of logical and orderly analytical approaches to solving management control problems.

(10) MANAGEMENT ACCOUNTING CASES (3 credits)

271-420Y 81

DAY: Thursdays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 lectures - 36 hours beginning 13 January 1977
PREREQUISITES: 1. Managerial Accounting - Planning and Control
2. Management Accounting Control Systems

The use of managerial accounting concepts and techniques to solve comprehensive business problems. Instruction will be by the case method, and written reports will be required.

(11) AN INTRODUCTION TO AUDITING (3 credits)

271-413X 51

DAY: Mondays 6 - 8 p.m.
FEE: $ 85.00
DURATION: 15 lectures - 36 hours beginning 30 August
PREREQUISITE: Financial Accounting II

Nature and purpose of auditing; appointment, remuneration, powers, duties and responsibilities of an auditor; internal control; audit programs; financial statement presentation; procedures for verification of items in financial statements; audit reports.

(12) OPERATIONAL AUDITING (3 credits)

271-430X 51

DAY: Mondays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 lectures - 36 hours beginning 30 August
PREREQUISITE: An Introduction to Auditing

Role of internal auditor; operational and managerial auditing; investigation audit procedures; audit of E.D.P. systems; current developments in auditing standards.

(13) EXTERNAL AUDITING (3 credits)

271-431Y 51

DAY: Mondays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 lectures - 36 hours beginning 10 January 1977
PREREQUISITE: An Introduction to Auditing

Auditing standards; auditor's legal rights and responsibilities; problems relating to: Incorporated business; consolidated statements, prospectuses; events subsequent to balance sheet date; audit of E.D.P. systems; audits requiring special considerations; investigations and special reports; current developments in auditing standards.

* (14) TAXATION I (3 credits)

271-412X 71	DAY:	Wednesdays 6 - 8 p.m.
271-412X 72	FEE:	$85.00
	DURATION:	15 lectures - 36 hours beginning 1 September
	PREREQUISITE:	Financial Accounting II

Introduction to principles of taxation; determination of taxable income - personal and corporate; capital gains; corporate distributions; non residents and international; administrative provisions; sales taxes.

* (15) SOCIAL PSYCHOLOGY (3 credits)

280-221X 56	DAYS:	Mondays 8 - 10 p.m.
280-221X 81		Thursdays 6 - 8 p.m.
280-221X 82	FEE:	$85.00
	DURATION:	15 lectures - 36 hours beginning 30 August, 2 September

Method and theories of analysing individual and small group behaviour. Topics include person perception, social motivation, attitudes, conformity, group structure, group dynamics and leadership phenomena. Experimental approach to social behaviour is emphasized.

* (16) INTRODUCTION TO ORGANIZATIONAL BEHAVIOUR (3 credits)

280-222X 56	DAYS:	Mondays 8 - 10 p.m.
280-222X 81		Thursdays 6 - 8 p.m.
280-222X 82	FEE:	$85.00
	DURATION:	15 lectures - 36 hours beginning 30 August, 2 September
	PREREQUISITE:	Social Psychology

The social psychology of organizations, the relationship of man to the organization in which he works, his motivation, attitudes and involvement in his work. Theories of perception, motivation and leadership as they relate to organizational problems.

(17) ORGANIZATIONAL THEORY (3 credits)

280-323Y 91	DAY:	Fridays 6 - 8 p.m.
	FEE:	$85.00
	DURATION:	15 lectures - 36 hours beginning 14 January 1977
	PREREQUISITE:	Introduction to Organizational Behaviour

The organization as a unit of analysis. Analysis of organizations as distinctive collectivities through an understanding of theories and problems of organization. Contributions of psychology, sociology and economics towards solving organizational problems of adaption, authority and power, conflict resolution, etc.

* (18) GROUP DYNAMICS AND INTERPERSONAL RELATIONS (3 credits)

272-420X 66	DAYS:	Tuesdays 8 - 10 p.m.
272-420X 71		Wednesdays 6 - 8 p.m.
272-420X 72	FEE:	$85.00
	DURATION:	15 lectures - 36 hours beginning 31 August, 1 September
	PREREQUISITE:	Introduction to Organizational Behaviour

Students will explore theory, research, and applications relating to group dynamics in task - oriented groups. Students will increase their level of awareness of group dynamics and their skills at functioning in work groups. Teaching/learning methods will include lecture and discussion, learning cells, skill development exercises (role plays, videotape analysis) and training laboratories (task group development and interpersonal sensitivity).

(19) PERSONNEL ADMINISTRATION (3 credits)

272-423Y 61

DAY: Tuesdays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 lectures - 36 hours beginning 31 August
PREREQUISITE: Introduction to Organizational Behaviour

This course is designed to introduce students to the various issues involved in personnel administration. The concepts and methods used by the staff personnel unit in building and maintaining an effective work force in an industrial organization will be discussed. Topics include the development of the ability to design the personnel subsystem within the firm and the problems encountered in such areas as recruitment, selection, motivation, communication and management training. Both a theoretical and case approach will be used.

(20) SALARY ADMINISTRATION (3 credits)

272-425Y 66

DAY: Tuesdays 8 - 10 p.m.
FEE: $85.00
DURATION: 15 lectures — 36 hours beginning 11 January 1977
PREREQUISITE: Introduction to Organizational Behaviour

This course is designed to expose the students to total compensation systems in business and service organizations. The emphasis is on understanding the various compensation theories and their relation to compensation policies within organizations. Behavioural effects of different types of compensation plans and how to make compensation plans more effective with the use of behavioural science knowledge will be discussed. Some of the topics that are covered in the course are: Nature of financial motivation, compensation theories, job design and job analysis, compensation practices, designing a compensation package, pay and organizational effectiveness.

* (21) COMMUNICATION SKILLS FOR MANAGERS (3 credits)

272-324X 71
272-324X 72

DAY: Wednesdays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 weeks — 36 hours beginning 1 September
PREREQUISITE: A practical knowledge of English

This course will be both theoretical and practical. The theory will relate to how people deal with other people in organizations; involving encoding, transmission, receiving and decoding of messages. It will examine the knowledge, skills, attitudes and habits that are used in reading, writing, speaking and listening as well as non-verbal communications. It will analyse how to think clearly and the theory of General Semantics. Students will study leadership skills in chairing a meeting. It will examine writing skills in detail.

* (22) MANAGEMENT INFORMATION SYSTEMS (3 credits)

280-331X 61
280-331X 66

DAY: Tuesdays 6 - 8 p.m.
Tuesdays 8 - 10 p.m.
FEE: $85.00 (plus $15. for use of computer)
DURATION: 15 lectures — 36 hours beginning 31 August

This course provides an introduction to computer systems and program flowcharting. Specific emphasis is placed on developing the ability to program (in Fortran) and utilize the resources available on the McGill time-sharing system. Problems of implementing computer systems in the organization are discussed.

(23) COMPUTER BASED INFORMATION SYSTEMS (3 credits)

273-332Y 71

DAY: Wednesdays 6 - 8 p.m.
FEE: $85.00 (plus $15 for use of computer)
DURATION: 15 lectures — 36 hours beginning 12 January 1977
PREREQUISITE: Management Information Systems

Methodology, techniques and components of systems design and programming, with emphasis on management information systems.

(24) INTRODUCTION TO SYSTEMS INNOVATION I (3 credits)

273-320X 51

DAY: Mondays 6 - 8 p.m.
FEE: $85.00

DURATION: 15 lectures — 36 hours beginning 30 August
PREREQUISITES: Management Information Systems or equivalent and preferably some business experience.

System Analysis. Emphasis is placed on the definition of systems requirements and the subsequent formulation of a general system solution to meet these requirements.

(25) INTRODUCTION TO SYSTEMS INNOVATION II (3 credits)

273-321Y 51
DAY: Mondays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 lectures — 36 hours beginning 10 January 1977
PREREQUISITE: Introduction to Systems Innovation I

System Development. Emphasis is placed on the detailed design of a system, construction and testing of the final system solution.

(26) INTERNAL CONTROLS AND SYSTEMS DESIGN (3 credits)

273-303Y 71
DAY: Wednesdays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 lectures — 36 hours beginning 12 January 1976
PREREQUISITE: Management Information Systems

Designed to provide management, accounting, systems and data processing personnel with an in-depth analysis of internal control techniques and computer system protection. Among the topics covered will be: the controls that should be incorporated into a system; monitoring of controls; evaluation of controls common to all E.D.P. applications; evaluation of controls for specific applications; standards of documentation; allocation and segragation of duties.

(27) SYSTEMS PROJECT MANAGEMENT (3 credits)

273-325X 76
DAY: Wednesdays 8 - 10 p.m.
FEE: $85.00
DURATION: 15 lectures — 36 hours beginning 1 September
PREREQUISITE: Internal Controls and Systems Design

A study of the techniques available to the project leader that enable him to translate a system's proposal into an operational system. Emphasis will be placed upon resource budgeting coordination and control via Gant, P.E.R.T. and C.P.M. techniques; as well as methods of organization, communication and motivation. Extensive use will be made of teaching aids and guest lecturers in an effort to relate to the specific realities confronting the systems project manager.

* (28) FINANCE I (3 credits)

280-341X 71
DAY: Wednesdays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 lectures — 36 hours beginning 1 September
PREREQUISITE: Financial Accounting I

An introduction to financial management and the role of finance, both within the firm and the economy as a whole. The institutional framework of the firm is discussed, including legal forms, taxes, financing instruments and the capital markets. An introduction to the analytics of finance is presented including the pricing of financial instruments, simple models of capital market equilibrium, the financial structure of the firm, cost of capital, dividend policy, investment criteria for new capital spending proposals, and working capital management.

(29) FINANCE II (3 credits)

274-342X 81
DAY: Thursdays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 lectures —,36 hours beginning 2 September
PREREQUISITE: Finance I

A presentation of the modern theory of finance. A foundation is established here from which students may pursue further specialization or from which specialists in other areas

may appreciate their interaction with the finance function. The theory covers three interrelated finance functions: Capital budgeting, corporate finance (including cost of capital, capital structure, and dividend policy), and portfolio theory. An analytic approach is taken where objectives are specified, constraints recognised and the resource allocation of capital on both personal and corporate levels investigated.

(30) INVESTMENTS AND PORTFOLIO MANAGEMENT (3 credits)

274-441X 76

DAY: Wednesdays 8 - 10 p.m.
FEE: $85.00
DURATION: 15 lectures — 36 hours beginning 1 September
PREREQUISITES: 1. Finance I
2. Finance II

The course examines the application of investment principles and security analysis to the selection and comparison of equity and fixed income securities in the current economic and financial environment. Also covered are: Determinants of stock prices, growth models and portfolio diversification.

(31) CAPITAL MARKETS AND INSTITUTIONS (3 credits)

274-442Y 71

DAY: Wednesdays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 lectures — 36 hours beginning 12 January 1977

This course studies the functions of the capital markets through flow of funds analysis and an examination of portfolio activities of financial intermediaries. Also covered are: Securities regulations and ethical considerations, the term structure of interest rates and risk and rates of return in debt and equity markets.

(32) MARKETING MANAGEMENT I & II (6 credits)

275-201Z 61
275-201Z 62

DAY: Tuesdays 6 - 8 p.m.
FEE: $170.00
DURATION 30 weeks — 72 hours beginning 31 August

A more extensive introduction to the basic problems and practices in marketing management. The focus is on problem-solving and decision making in marketing, on identifying key market opportunities and applying the organization's resources to these opportunities. Real life examples, case studies, discussions, lectures, and text material form the basis for this course. Topics covered include: the marketing system and environment; the marketing concept; marketing planning and strategy; market segmentation and buyer behaviour in industrial and consumer markets; marketing research and sales forecasting; product policy and new product introduction; product pricing, advertising and distribution; sales force management; and marketing control.

* (33) MARKETING MANAGEMENT I (3 credits)

280-352X 66

DAY: Tuesdays 8 - 10 p.m.
FEE: $85.00
DURATION: 15 weeks — 36 hours beginning 31 August

An introduction to marketing management focussing on the problems of the marketing manager in the measurement of market opportunities and the allocation of marketing effort. Emphasis is on decision-making in a marketing context. Topics covered include: the marketing concept; marketing strategies; marketing research; buyer behaviour; product and price policies; advertising, distribution and sales force decision. The course relies on lectures, text material and case studies.

(34) MARKETING RESEARCH (3 credits)

275-451X 61

DAY: Tuesdays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 weeks — 36 hours beginning 31 August
PREREQUISITE: Marketing Management I

Training in the design, execution and interpretation of survey and experimental methods in marketing. Emphasis is placed upon sample design, data collection and data processing; evaluation of alternative, experimental designs, execution of problems and interpretation of data. A review of illustrative research studies is made; an actual study is designed and data are collected and interpreted.

(35) MARKETING PLANNING I (3 credits)

275-357X 51

DAY: Mondays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 weeks — 36 hours beginning 30 August
PREREQUISTIE: Marketing Research

Marketing planning is viewed as a continuous process involving (1) setting company marketing goals, (2) assessing market opportunities, (3) developing a market strategy, (4) developing a set of integrated action programs, (5) monitoring the implementation of programs and adjusting the marketing plan. Emphasis is placed on steps 4 and 5, especially with regard to new product programs. Attention is given to the development of marketing planning systems — organizations and procedure — to make marketing planning a formal, coordinated, continuous process. Problems of implementation of new plans and systems in an ongoing organization are highlighted.

(36) MARKETING PLANNING II (3 credits)

275-358Y 56

DAY: Mondays 8 - 10 p.m.
FEE: $85.00
DURATION: 15 weeks — 36 hours beginning 10 January 1977
PREREQUISITE: Marketing Planning I

This is the second part of the Marketing Planning sequence in which the class is conducted as a seminar, with groups working on different "live" marketing problems faced by local and national businesses. The groups progress from an initial briefing stage with their clients, to the definition and analysis of "the problem", and finally to the set of recommendations, which they present as a group to the class, professor and client. The objective is to simulate a real life business situation, and to provide experience in the formulation and presentation of marketing plans.

* (37) ADVERTISING MANAGEMENT (3 credits)

275-453X 51

DAY: Mondays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 weeks — 36 hours beginning 30 August

Surveys the field of advertising in its social and management contexts. Examines the organization as it relates to the advertisers, the agency and media. Develops the creative approach, strategy and tactics as related to the total marketing management.

(38) RETAIL MANAGEMENT (3 credits)

275-459Y 71

DAY: Wednesdays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 weeks — 36 hours beginning 12 January 1977

Principles and methods of management as applied to retailing, including location, organization, personnel, buying, inventory control, selling and advertising, services, expenses and profits.

(39) INDUSTRIAL MARKETING (3 credits)

275-456Y 71

DAY: Wednesdays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 weeks — 36 hours beginning 12 January 1977
PREREQUISITE: Marketing Management I

The course focusses on decision-making and management of the marketing effort in an industrial product context. The student gains an understanding of the industrial marketing environment and of the problems faced by the industrial marketing manager. Topics covered include: the industrial marketing system; industrial purchasing; researching the industrial market; product, price, distribution, selling and advertising decisions; strategies for industrial markets. A combination of lecture and case discussions are used.

(40) SALES MANAGEMENT (3 credits)

275-455X 61

DAY: Tuesdays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 weeks — 36 hours beginning 31 August
PREREQUISITE: Marketing Management I

An analytical study of the techniques and policies employed in the operation of a sales organization. The approach is from the viewpoint of the sales managers of an enterprise. Extensive use will be made of case materials in considering the problems of recruiting, training, controlling and managing the sales force. Sales appeals, quotas, and sales analysis and forecasting will also be discussed.

(41) PHYSICAL DISTRIBUTION (3 credits)

275-353X 61

DAY: Tuesdays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 weeks — 36 hours beginning 31 August
PREREQUISITE: Marketing Management I

Systems approach to physical distribution; traffic management; plant and warehouse location; inventory control; information flows and order processing; supply scheduling; total cost planning; organizational patterns.

(42) BUSINESS ADMINISTRATION I (3 credits)

276-200X 61
276-200X 62

DAY: Tuesdays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 weeks — 36 hours beginning 31 August

Management practice in business administration through the case method, emphasizing the financial function and the integration of management processes with policy.

(43) BUSINESS ADMINISTRATION II (3 credits)

276-201Y 61
276-201Y 62

DAY: Tuesdays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 weeks — 36 hours beginning 11 January 1977
PREREQUISITE: Business Administration I

A general approach to business administration, management practice, marketing and personnel. Presents concepts to deal with a range of cases drawn from varied industries where analysis and decision making are required.

(44) MANAGEMENT POLICY (3 credits)

276-210X 51
276-210X 52

DAY: Mondays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 weeks — 36 hours beginning 30 August

Management of organizations; the process of determining corporate strategy and its operational expression, including decision models; dynamic processes of implementation and control; organization design for the accomplishment of purpose; internal and environmental aspects of the management of change; professional management in the present and the future.

(45) BUSINESS STRATEGY (3 credits)

276-303Y 51

DAY: Mondays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 weeks — 36 hours beginning 10 January 1977
PREREQUISITES: Management Policy and core courses of F.I.C.B.

The main objective of this course is the formulation and implementation of long-range decisions. These decisions should take into account the broader socio-economic background and should also ensure integration of the needs of the various corporate functional areas. Emphasis will be placed on the inter-relationship of these functional areas, as this is the only course that will integrate the knowledge acquired by the bankers in previously taken courses in more specific disciplines.

It is expected that this course will develop an awareness of the factors involved in the determination and implementation of corporate strategy and an understanding of the concept of corporate citizenship.

(46) TRANSPORTATION POLICY (3 credits)

276-306Y 51

DAY: Mondays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 weeks — 36 hours beginning 10 January 1977
PREREQUISITE: Management Policy

The course is designed to provide students with new perspectives of major policy decisions facing Canadian transport. Executives of transportation companies will be guest lecturers. Management policies of each mode, their competitive position, their planning and current technology will be examined.

Government policy and Canadian transport will be discussed as well as transportation from the view of the user and transportation as it relates to our society in general. Case studies and a major term paper will be included.

* (47) MATHEMATICS OF FINANCE (3 credits)

277-201X 71

DAY: Wednesdays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 weeks — 36 hours beginning 1 September
PREREQUISITES: 1. Remedial Mathematics I
2. Remedial Mathematics II

Simple and compound interest; discount equated time; equation of value annuities certain; perpetuities, sinking funds; bonds; amortization tables; depletion; depreciation and capitalized cost.

(48) SURVEY OF BASIC MATHEMATICS I (3 credits)

277-203X 71

DAY: Wednesdays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 weeks — 36 hours beginning 2 September
PREREQUISITES: 1. Remedial Mathematics I
2. Remedial Mathematics II

Students are required to take both Survey of Basic Mathematics I & II to complete program requirements in this subject.

The first of the courses will complete an intensive review of basic mathematics including algebra, graphs, functions and logarithms, and a start will be made to calculus including limits etc. (see Survey of Basic Mathematics II)

The material covered in Survey of Basic Mathematics I & II will enable students to follow the usual mathematical applications in business, economics, statistics and operations research.

(49) SURVEY OF BASIC MATHEMATICS II (3 credits)

277-204Y 71

DAY: Wednesdays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 weeks — 36 hours beginning 20 January 1977
PREREQUISITE: Survey of Basic Mathematics I

A continuation of Survey of Basic Mathematics I will proceed with calculus including limits, functions of one variable, differentiation, integration and applications; and to matrix algebra including determinants and solutions of simultaneous linear equations.

* (50) STATISTICS I (3 credits)

280-271X 81

DAY: Thursdays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 weeks — 36 hours beginning 2 September
PREREQUISITES: 1. Remedial Mathematics I & II
2. Survey of Basic Mathematics I & II

The course introduces the student to statistical concepts and methodology, demonstrates their application to management problems, and constitutes a foundation for further study in the subject. Topics include: Descriptive statistics and statistical inference; probability theory, random processes, some important discrete and continuous probability distributions, sampling distributions, introduction to decision theory, index numbers.

* (51) STATISTICS II (3 credits)

280-272X 81

DAY: Thursdays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 weeks — 36 hours beginning 2 September
PREREQUISITE: Statistics I

Decision theory, hypothesis testing and estimation, goodness-of-fit tests, analysis of variance, sample surveys and experimental design, simple and multiple regression and correlation analysis, time series.

* (52) LAW I (3 credits)

278-201X 71
278-201X 72

DAY: Wednesdays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 weeks — 36 hours beginning 1 September

Introduction to law; the Canadian Constitution and the division of powers; the Quebec Civil Code comprising the law of persons, the law of property, obligations, contracts, sale, lease and hire, mandate, surety, privileges, hypothecs and prescription.

(53) LAW II (3 credits)

278-203Y 71

DAY: Wednesdays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 Weeks — 36 hours beginning 12 January 1977
PREREQUISITE: Law I

Canada Corporations Act; Quebec Companies Act; Canada Business Corporations Act; bankruptcy and liquidations; executorship; negotiable instruments.

(54) TRANSPORTATION LAW AND GOVERNMENT REGULATIONS (6 credits)

278-205Z 81

DAY: Thursdays 6 - 8 p.m.
FEE: $170.00
DURATION: 30 weeks — 72 hours beginning 2 September

Law as it relates to all modes of public transportation in Canada; law of the carriage of goods and the rights and liabilities of the carriers, shippers and consignees; the National Transportation Act and the legal consequences of the declared national transportation policy.

This course assumes a background such as contained in the C.I.T.T. courses on page 115.

* (55) PRINCIPLES OF ECONOMICS I (MACRO) (3 credits)

279-201X 61
279-201X 62
279-201X 63
279-201X 66

DAY: Tuesdays 6 - 8 p.m.
Tuesdays 8 - 10 p.m.
FEE: $85.00
DURATION: 15 weeks — 36 hours beginning 31 August

Introduction to the basic forces at work in our economic system; the concepts of national output and income; aggregate employment and the general level of prices; the role of money and the banking system; fiscal and monetary policies; international economics; economic growth and development.

* (56) PRINCIPLES OF ECONOMICS II (MICRO) (3 credits)

279-202Y 66

DAY: Tuesdays 8 - 10 p.m.
FEE: $85.00
DURATION: 15 weeks — 36 hours beginning 31 August

Economic analysis of the firm, its environment and behaviour; price-production policies; market behaviour and performance under varying conditions of competition and monopoly; application of micro-economic theory to economic problems of the firm in the context of managerial decision-making.

(57) MANAGERIAL ECONOMICS (3 credits)

280-393X 51

DAY: Mondays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 weeks — 36 hours beginning 30 August
PREREQUISITES: 1. Principles of Economics I (Macro)
2. Principles of Economics II (Micro)

The course focuses on the application of economic theory to management problems and the economic foundations of marketing, finance, and production. Attention is given to

the following topics: Price and cost analysis, demand and supply analysis.

(58) TRANSPORTATION ECONOMICS (6 credits)

279-206Z 61

DAY: Tuesdays 6 - 8 p.m.
FEE: $170.00
DURATION: 30 weeks — 72 hours beginning 31 August

The economics of rail, air, truck, bus, steamship and pipeline as means of transporting goods and people. The historical influence of government on the economics of transportation costs and prices; the cost and price structure of competitive carriers; price policies under conditions of pure competition, imperfect competition and monoply. Administrative pricing within the transportation industry and the effect of regulation on pricing policy of carriers.

This course assumes a background such as contained in the C.I.T.T. courses on page 115.

(59) INTRODUCTION TO INDUSTRIAL RELATIONS (3 credits)

279-294X 61

DAY: Tuesdays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 weeks — 36 hours beginning 31 August

An introduction to the problems of labour-management relations, the structure, function and government of labour unions, labour legislation, the collective bargaining process, and the public interest in industrial relations.

(60) COLLECTIVE BARGAINING (3 credits)

279-394Y 61

DAY: Tuesdays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 weeks — 36 hours beginning 11 January 1977
PREREQUISITE: Introduction to Industrial Relations

This course is designed for those students who wish to study principles in collective bargaining in Canada and abroad. It deals with the structure of the bargaining parties and the structure of bargaining itself. It is problem-oriented and relies on empirical data and case problems.

(61) INTERNAL COMMUNICATIONS MANAGEMENT I (3 credits)

(In co - operation with the International Association of Business Communicators — Canada, District One)

628-022X 61

DAY: Tuesdays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 weeks — 36 hours beginning 31 August
PREREQUISITE: An interview is required for admission. For more information contact 392-6704.

The purpose of this course is to examine the expanding role and scope of the internal communicator in industry, business, government and institutions. It is designed to provide an introduction to the wide range of practical skills needed by today's professional in communications management. Techniques and topics explored will include basic journalism, graphics and design, various media production processes, and communications theory, policy and administration.

(62) INTERNAL COMMUNICATIONS MANAGEMENT II (3 credits)

628-023Y 61

DAY: Tuesdays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 weeks — 36 hours beginning 11 January 1977
PREREQUISITE: Internal Communications Management I

An extension of internal Communications Management I, this course should be taken by those interested in expanding their management skills in business communications. Lecturers will identify specific problems and developments related to publications, audio-visual programs and support communications systems. The course will be structured around a combination of lectures, seminars, workshops and case studies involving individual and team projects. A certificate in Internal Communications Management will be issued by the affiliated organization upon successful completion of both courses.

(63) A PRACTICAL COURSE IN PUBLIC RELATIONS MANAGEMENT I (3 credits) (In co-operation with the Canadian Public Relations Society (Quebec) Inc.)

628-020X 51

DAY: Mondays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 weeks — 36 hours beginning 30 August

Why and how business and other organizations seek the goodwill of general and specific "publics". How news handling, employee and investor communications, community relations and other aspects of a co-ordinated program fulfil a public relations policy. Case studies and guest lectures. The course is designed both for students and practitioners seeking broader PR career knowledge and for executives who need an understanding of the public relations function.

(64) A PRACTICAL COURSE IN PUBLIC RELATIONS MANAGEMENT II (3 credits)

628-021Y 51

DAY: Mondays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 weeks — 36 hours beginning 10 January
PREREQUISITE: A Practical Course in Public Relations Management I

This Part II is a continuation of Part I and examines the operation of public relations in business, government and corporate communications. A certificate by the affiliated organization is given upon successful completion of Part II

(65) APPRAISAL OF REAL ESTATE I (6 credits)

628-009Z 81

DAY: Thursdays 6 - 9 p.m.
FEE: $170.00
DURATION: 20 weeks — 72 hours beginning 2 September

A program of lectures, problems and case studies designed to commence professional training in real estate appraising. Subjects include the nature of real property and value, the appraisal process, site analysis and valuation, property inspection, building materials and equipment. Cost approach, depreciation and the legal aspects of real estate.

Students completing this course may apply to the Appraisal Institute of Canada to write the first year examination.

(66) APPRAISAL OF REAL ESTATE II (6 credits)

628-010Z 51

DAY: Mondays 6 - 9 p.m.
FEE: $170.00
DURATION: 20 weeks — 72 hours beginning 30 August

Primary emphasis will be placed on income and operating expense analysis, methods and techniques of capitalization, mortgage equity capitalization, residual techniques, market data approach, and the appraisal of lease interests. Emphasis will be placed upon practical urban appraisal problems.

Students completing this course may apply to the Appraisal Institute of Canada to write the corresponding second year examination.

(67) APPRAISAL OF REAL ESTATE III (6 credits)

628-011Z 51

DAY: Mondays 6 - 9 p.m.
FEE: $170.00
DURATION: 20 weeks — 72 hours beginning 30 August
PREREQUISITES: 1. Appraisal of Real Estate I
2. Appraisal of Real Estate II

The third year program will be devoted primarily to case studies selected to give the student a wide exposure to a variety of appraisal problems confronted in the course of normal practice. Time will be devoted to the preparation of a narrative appraisal report. Concentration will be on the practical aspects of what is required in a proper narrative report, where the information can be found, how it should be analysed and presented in the report and how a typical narrative report should be organized and written.

(68) GENERAL INSURANCE I (BROKERS) (6 credits)

628-007Z 71

DAY: Wednesdays 6 - 8 p.m.
FEE: $170.00
DURATION: 30 weeks — 72 hours beginning 1 September

The law, theory and practice of insurance, policy construction and interpretation for all major classes of insurance including automobile, fire, crime, liability and life. This course will use the Insurance Brokers' Association text book and is designed for entrants into the practice of insurance, but will also be helpful for non-professionals who desire a general understanding of insurance.

SPECIALIZED COURSES

The Centre is ready to develop specialized courses to meet student needs. The following courses are normally offered to students who are advanced in their program. Due to the small numbers of students involved special arrangements may have to be made in order to make sure the course can take place.

* (69) TAXATION II (3 credits)

271-441X 96

DAY: Saturdays 9 a.m. - 12 p.m.
FEE: $85.00
DURATION: 15 lectures — 36 hours beginning 4 September
PREREQUISITE: Taxation I

The development and application of the topics presented in the introductory income tax course. Tax planning matters are dealt with throughout. Primary emphasis will be on the corporation and its shareholders.

(70) EFFECTIVE SPEAKING AND SPEECH PREPARATION (3 credits)

628-024X 71

DAY: Wednesdays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 lectures — 36 hours beginning 1 September
PREREQUISITE: A practical knowledge of English

For business and professional people, this course offers a workshop approach to developing and improving the speaking skills required in management positions. Through practice, observation and evaluation, class members learn how to organize and present their thoughts in a logical and persuasive manner, how to respond to questioning and how to assess audience reaction. A variety of speaking situations are covered, including the public platform, radio and TV interviews, conferences, seminars and group meetings.

(71) SYSTEMS INNOVATION WORKSHOP I (3 credits)

273-322X 91

DAY: Fridays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 lectures — 36 hours beginning 10 September
PREREQUISITES: 1. Introduction to Systems Innovation II
2. A minimum of two years' business experience.

System Analysis Workshop. The course explores ways of avoiding the obstacles usually encountered in systems planning, problem definition, and the preparation of system proposals.

(72) SYSTEMS INNOVATION WORKSHOP II (3 credits)

273-323Y 91

DAY: Fridays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 lectures — 36 hours beginning 14 January 1977
PREREQUISITE: Systems Innovation Workshop I

System Development Workshop. The course examines the system design and implementation processes with specific emphasis on the solution of problems frequently encountered.

(73) DATA ADMINISTRATION (3 credits)

273-324X 56

DAY: Mondays 8 - 10 p.m.
FEE: $85.00
DURATION: 15 lectures — 36 hours beginning 30 August
PREREQUISITE: Management Information Systems

The course covers a variety of topics within the Data Administration function varying from the most fundamental to the more advanced. No previous knowledge in data administration is required of the student although the fundamentals of programming (FORTRAN or COBOL) and at least a superficial knowledge of hardware and software is expected. Most of the thirty hours of class time will be devoted to lectures although assignments and class problems will also be discussed.

(74) SHOPPING CENTRES AND DOWNTOWN RETAIL LOCATIONS (3 credits)

625-009X 71

DAY: Wednesdays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 lectures — 36 hours beginning 1 September

Retail locations with an emphasis on shopping centres from the point of view of the retailer, developer and mortgage lender. Major topics include: Economics of shopping centres; department store and discount department store policies; financing of shopping centres and commercial buildings; utilization of shopping centre economic reports; downtown locations; tenant mix in shopping centres; leases; architectural trends in shopping centres; promotion of shopping centres; parking and ratios.

(75) PROFESSIONAL SELLING (6 credits)

625-010Z 61

DAY: Tuesdays 6 - 8 p.m.
FEE: $170.00
DURATION: 30 weeks — 72 hours beginning 31 August

This course is a useful option in the McGill Certificate in Marketing. It is designed to meet the needs of salesmen who are interested in advancement or who are interested in a refresher course. Topics will include the relationship between selling and marketing; the social and economic roles of selling; selling as a career; qualifications of salesmen; the relationship between salesmen, company, and customer; the work required of the salesman; salesmen and product competition.

(76) CONSUMER BEHAVIOUR (3 credits)

275-452X 71

DAY: Wednesdays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 weeks — 36 hours beginning 1 September

A study of basic factors influencing consumer behaviour. Attention is focused on psychological, sociological and economic variables including motivation, learning, attitude, personality, small groups social class, demographic factors and culture, to analyze their effects on purchasing behaviour.

(77) QUANTITATIVE ANALYSIS FOR MARKETING DECISIONS (3 credits)

275-458X 71

DAY: Wednesdays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 weeks — 36 hours beginning 1 September

The development of analytic quantitative models of various aspects of the firm's marketing environment and of models of marketing decision problems. The use of such models as a basis for marketing decisions. Topics include: Market measurement, estimation of various kinds of market data, indentification of the relationships between marketing variables and forecasting.

(78) PRODUCTION AND OPERATIONS MANAGEMENT (3 credits)

627-008X 61

DAY: Tuesdays 6 - 8 p.m.

FEE:	$85.00
DURATION:	15 weeks — 36 hours beginning 31 August
PREREQUISITE:	1. Remedial Mathematics I 2. Remedial Mathematics II

Principles and analysis related to the effective utilization of the factors of production to manufacturing and service industries. Topics covered are processes and process planning, location, facility design and layout, work measurement and production standards, production- inventory systems, scheduling and control, quality control, maintenance.

(79) OPERATIONS RESEARCH I (3 credits)

280-373X 71

DAY:	Wednesdays 6 - 8 p.m.
FEE:	$85.00
DURATION:	15 weeks — 36 hours beginning 1 September
PREREQUISITES:	1. Survey of Basic Mathematics I 2. Survey of Basic Mathematics II 3. Statistics I

The object of the course is to introduce the student to applications of mathematical model building and analysis in managerial decision-making. The student is introduced to some of the following topics: Mathematical programming including linear programming and network analysis; simple stochastic processes including waiting lines and inventory systems; simulation.

(80) INTERNATIONAL BUSINESS (3 credits)

278-300X 56

DAY:	Mondays 8 - 10 p.m.
FEE:	$85.00
DURATION:	15 weeks — 36 hours beginning 30 August

This course studies the international environment and its impact on business behaviour, considering cultural, social, economic and institutional factors. It will cover the major functions of international business, export and import trade and foreign investment. In addition, it will deal with production and marketing operations, government policies and business practices.

(81) GENERAL INSURANCE II (BROKERS) (6 credits)

628-008Z 81

DAY:	Thursdays 6 - 8 p.m.
FEE:	$170.00
DURATION:	30 weeks — 72 hours beginning 2 September
PREREQUISITE:	General Insurance I or A.I.B. member

The classes of insurance covered in the preliminary course will be dealt with more extensively and in greater depth. The course is oriented towards the application of insurance knowledge and features risk analysis and designing an insurance program.

(82) BUILDING CONSTRUCTION AND COST ESTIMATING (3 credits)

628-025X 61

DAY:	Tuesdays 6 - 8 p.m.
FEE:	$85.00
DURATION:	15 weeks — 36 hours beginning 31 August

An introductory course primarily for students following the Appraisal of Real Estate courses. The material is broad and general in scope and is designed to provide the student with a better appreciation and knowledge of basic design, materials and construction. Various costing methods such as the use of cost manuals and unit in place costing will be explored.

(83) LAND ECONOMICS (3 credits)

279-301X 61

DAY:	Tuesdays 6 - 8 p.m.
FEE:	$85.00
DURATION:	15 weeks — 36 hours beginning 31 August
PREREQUISITE:	1. Principles of Economics I (Macro) 2. Principles of Economics II (Micro)

Primary emphasis on urban land economics and use. Specific topics are the pattern of land values and their determinants, land development patterns, land use competition the-

ory, land use succession, the locational criteria of industrial, warehousing, wholesaling, retailing and residential land uses in metropolitan areas. Also an introduction to agricultural land economics and mineral values of land.

(84) MONEY AND BANKING (3 credits)

279-300X 71

DAY: Wednesdays 6 - 8 p.m.
FEE: $85.00
DURATION: 15 weeks — 36 hours beginning 1 September
PREREQUISITE: 1. Principles of Economics I (Macro)
2. Principles of Economics II (Micro)

Principles of money, banking, and central banking covering the nature of money, measurement of money supply, determination of the quantity of money; sources of bank funds, uses of bank funds; nature of central banking, monetary policy and the international payments system.

(85) GOVERNMENT AND BUSINESS (6 credits)

154-305Z 61

DAY: Tuesdays 6 - 8 p.m.
FEE: $170.00
DURATION: 30 weeks — 72 hours beginning 31 August
PREREQUISITE: 1. Principles of Economics I (Macro)
2. Principles of Economics II (Micro

Forms of government regulation of business in Canada. Problems of maintaining effective competition. Experience in Canada and other countries will be examined. Role of government in economy, oligopoly and market power, competition policy and social control of business. Reading will cover leading law cases as well as relative economic literature.

OTHER COURSES NOT WITHIN REGULAR PROGRAMS

(86) REMEDIAL MATHEMATICS I

627-000X 71

DAY: Wednesdays 6 - 8 p.m.
FEE: $75.00
DURATION: 15 weeks — 30 hours beginning 1 September

A remedial course strongly recommended along with Remedial Mathematics II for those students who are required to take Mathematics of Finance, but who have never taken logarithms and progressions in intermediate or elementary algebra or who have forgotten them. The associative, distributive and commutative laws: Fundamental operations; factoring and simplification of algebraic expressions; equations of the first degree in one and two unknowns; quadratic equations, indices, logarithms, progressions, simple graphs, linear interpolation.

(87) REMEDIAL MATHEMATICS II

627-001Y 71

DAY: Wednesdays 6 - 8 p.m.
FEE: $75.00
DURATION: 15 weeks — 30 hours beginning 12 January 1977
PREREQUISITE: Remedial Mathematics I

A continuation of Remedial Mathematics I covering: Set theory and elementary matrices; functional notation; sigma notation; properties of polynomials including factor theorem; progressions, binomial theorem; factorial notation; inequalities and determinants.

(88) INTRODUCTION TO TRAVEL COUNSELLING

(In co-operation with the Canadian Institute of Travel Counsellors (Quebec))

628-015Z 51

DAY: Mondays & Wednesdays 6 - 8 p.m.
FEE: $150.00
DURATION: 15 weeks — 60 hours beginning 30 August

This is an introductory course for new employees working for a travel agency or for those interested in entering this field of work. The course will survey world tourism and the complete travel service offered by an agency. Practical topics include: Ticketing, documentation, geography, as applied to individuals and groups; air, steamship, train, car rentals, etc. form individual parts of the course. Guest lecturers will discuss specialized topics

and problems related to travel. A certificate will be awarded by the C.I.T.C. (Quebec) to successful students. A course material fee of $30.00 is charged to students and is payable to the C.I.T.C. (Quebec).

(89) ORGANIZATIONS AS SYSTEMS (1A)

626-001X 81

DAY: Thursdays 6 - 8 p.m.
FEE: $ 75.00
DURATION: 15 weeks — 30 hours beginning 2 September

The purpose of the new course is to help the students understand organizations as functioning systems. The study of the external environment in which organizations function will focus on economic, social, political, legal, governmental, industrial, competitive, and cultural forces generating inputs which impact on the organizations. Organization resources including people, capital, facilities, and output, will be examined. Students will then focus on the internal environment which can be shaped by individuals and managers at all levels to achieve organizational objectives. This includes the study of work-flow, and authority-power, communication, reward, and role structures. All of these functioning together, and interacting with the external environment we call organization.

(90) MANAGERIAL ACCOUNTING (1B)

621-000Y 81

DAY: Thursdays 6 - 8 p.m.
FEE: $75.00
DURATION: 15 weeks — 30 hours beginning 13 January 1977

Managerial accounting is concerned with the exposure of the student to accounting theory and logic, cost control & profit planning, and appreciation of the techniques of financial analysis. Accounting theory & logic exposes the student to simple financial statements, how to read and understand them and the effect of routine business transactions upon them.

Accounting for cost control and profit planning explores the management tools provided through standard cost accounting, budgetary control, cost/volume/profit relationship. This is expected to give the student an appreciation of the benefits of a sound financial information system.

Financial analysis concentrates on comparative analysis, the methods used in identifying strengths and weaknesses and factors affecting income trends.

The emphasis is placed on analysis, interpretation and use of accounting data.

(91) QUANTITATIVE INFORMATION FOR DECISIONS (2A)

627-004X 81

DAY: Thursdays 8 - 10 p.m.
FEE: $75.00
DURATION: 15 weeks — 30 hours beginning 2 September

This course is concerned with the expression of facts about the organization in quantitative terms. This includes statements on data containing uncertainty, on ways that decisions can be made under various circumstances and a delineation of the managerial decisions to which quantitative methods can make a contribution. It involves discussion of models for analysing data in common use in industry and how they contribute to decision making. The end result is that the student should be able to make intelligent use of specialists.

(92) ORGANIZATIONAL AND HUMAN BEHAVIOUR (2B)

628-014Y 81

DAY: Thursdays 8 - 10 p.m.
FEE: $75.00
DURATION: 15 weeks — 30 hours beginning 13 January 1977

Organizational and human behaviour will explore the interrelationship of individual personality and work, the characteristics of organizations and occupation and relationship of the first two factors to the business and economic dimensions of society.

Included are the structure of the organization in relation to the goals of the organization, integration of the reward system and objectives of the organization, the management of communication, and the dynamics of groups.

(93) MANAGEMENT OF HUMAN RESOURCES (4A)

622-023X 81

DAY: Thursdays 8 - 10 p.m.

FEE: $75.00
DURATION: 15 weeks — 30 hours beginning 2 September

The role of an administrator in dealing with human problems and developing leadership in organizational structures. The Labour Relations Act, the Labour Code, union relations, job evaluation, wages and salary administration, personnel administration and communications.

(94) CASES AND PROBLEMS IN ADMINISTRATION (4B)

626-004Y 81

DAY: Thursdays 6 - 8 p.m.
FEE: $75.00
DURATION: 15 weeks — 30 hours beginning 13 January 1977
PREREQUISITE: All previous courses in the C.I.M. program

An integrating course dealing with the total organization including the issues of goal setting, strategy, and implementation. Some discussions will be devoted to financial analysis. Students will participate in group discussions on case problems, analyse specific case material and present their findings to the class.

The following two courses are offered on the McGill Campus but registration takes place through the Canadian Institute of Traffic and Transportation. For further information please contact Ms. B. A. Parkin, Canadian Institute of Traffic and Transportation, 44 Victoria Street, Suite 2120, Toronto, Ontario M5C 1Y2 Telephone: (416) 363-5696

(95) CANADIAN INSTITUTE OF TRAFFIC AND TRANSPORTATION YEAR I

628-001Z 51

DAY: Mondays 6 - 8 p.m.
DURATION: 22 weeks — 45 hours

The areas of study are: Regulation of transportation; Canadian transportation facilities; intermediate transportation agencies; transport rates, tolls and tariffs; freight tariffs.

(96) CANADIAN INSTITUTE OF TRAFFIC AND TRANSPORTATION YEAR II

628-002Z 56

DAY: Mondays 8 - 10 p.m.
DURATION: 22 weeks — 45 hours

The areas of study are: International rates; class and commodity tariffs; export and import rates; contracts; sales and bills of lading; marine insurance on cargo; warehousing; Canadian customs; damage prevention and damage claims; materials handling; unitization devices; physical distribution; business travel arrangements.

COURSE LIST BY SUBJECT

ACCOUNTING

1. Introduction to Financial Accounting
2. Financial Accounting I
3. Financial Accounting II
4. Financial Accounting III
5. Financial Accounting IV
6. Introduction to Management Accounting
7. Management Accounting — Cost Determination and Analysis
8. Management Accounting — Planning and Control
9. Management Accounting — Control Systems
10. Management Accounting Cases
11. An Introduction to Auditing
12. Operational Auditing
13. External Auditing
14. Taxation I
69. Taxation II
90. Managerial Accounting (IB)

BEHAVIOURAL SCIENCE

15. Social Psychology
16. Introduction to Organizational Behaviour
17. Organizational Theory
18. Group Dynamics and Interpersonal Relations
19. Personnel Administration
20. Salary Administration
21. Communication Skills for Managers
70. Effective Speaking and Speech Preparation
93. Management of Human Resources (4A)

COMPUTER SYSTEMS

22. Management Information Systems
23. Computer Based Information Systems
24. Introduction to Systems Innovation I
25. Introduction to Systems Innovation II
26. Internal Controls and Systems Design
27. Systems Project Management
71. Systems Innovation Workshop I
72. Systems Innovation Workshop II
73. Data Administration

FINANCE

28. Finance I
29. Finance II
30. Investments and Portfolio Management
31. Capital Markets and Institutions

MARKETING

32. Marketing Management I & II
33. Marketing Management I
34. Marketing Research
35. Marketing Planning I
36. Marketing Planning II
37. Advertising Management
38. Retail Management
39. Industrial Marketing
40. Sales Management
41. Physical Distribution
74. Shopping Centres and Downtown Retail Locations
75. Professional Selling
76. Consumer Behaviour
77. Quantitative Analysis for Marketing Decisions

POLICY

42. Business Administration i
43. Business Administration II
44. Management Policy
45. Business Strategy
46. Transportation Policy
89. Organization as Systems (1A)
94. Cases and Problems in Administration (4B)

QUANTITATIVE METHODS

47. Mathematics of Finance
48. Survey of Basic Mathematics I
49. Survey of Basic Mathematics II
50. Statistics I
51. Statistics II
78. Production and Operations Management
79. Operations Research I
86. Remedial Mathematics I
87. Remedial Mathematics II
91. Quantitative Information for Decisions (2A)

GENERAL

52. Law I
53. Law II
54. Transportation Law and Government Regulations
61. Internal Communications Management I
62. Internal Communications Management II
63. A Pratical Course in Public Relations Management I
64. A Pratical Course in Public Relations Management II
65. Appraisal of Real Estate I
66. Appraisal of Real Estate II
67. Appraisal of Real Estate III
68. General Insurance I (Brokers)
80. International Business
81. General Insurance II (Brokers)
82. Building Construction and Cost Estimating
88. Introduction to Travel Counselling
92. Organizational and Human Behaviour (2B)
95. Canadian Institute of Traffic and

Transportation Year I
96. Canadian Institute of Traffic and Transportation Year II

ECONOMICS

55. Principles of Economics I (Macro)
56. Principles of Economics II (Micro)
57. Managerial Economics
58. Transportation Economics
59. Introduction to Industrial Relations
60. Collective Bargaining
83. Land Economics
84. Money and Banking
85. Government and Business

COURSE LIST BY EVENING AND TIME

(FOR FALL TERM ONLY)

MONDAY 6:00 p.m.

(1) Introduction to Financial Accounting
(6) Introduction to Management Accounting
(11) Introduction to Auditing
(12) Operational Auditing
(24) Introduction to Systems Innovation I
(35) Marketing Planning I
(37) Advertising Management
(44) Management Policy
(57) Managerial Economics
(63) A Practical Course in Public Relations
(66) Appraisal of Real Estate II
(67) Appraisal of Real Estate III
(88) Introduction to Travel Counselling
(95) Canadian Institute of Traffic and Transportation Year I

MONDAY 8:00 p.m.

(1) Introduction to Financial Accounting
(15) Social Psychology
(16) Introduction to Organizational Behaviour
(73) Data Administration
(80) International Business
(96) Canadian Institute of Traffic and Transportation Year II

TUESDAY 6:00 p.m.

(2) Financial Accounting I
(3) Financial Accounting II
(22) Management Information Systems I
(32) Marketing Management I & II
(34) Marketing Research
(40) Sales Management
(41) Physical Distribution
(42) Business Administration I
(55) Principles of Economics I (Macro)
(58) Transportation Economics
(59) Introduction to Industrial Relations
(61) Internal Communications Management I
(75) Professional Selling
(78) Production and Operations Management
(82) Building Construction and Cost Estimation
(83) Land Economics
(85) Government and Business

TUESDAY 8:00 p.m.

(18) Group Dynamics & Interpersonal Relations
(22) Management Information Systems I
(33) Marketing Management I
(55) Principles of Economics I (Macro)
(56) Principles of Economics II (Micro)

WEDNESDAY 6:00 p.m.

(4) Financial Accounting III
(14) Taxation I
(18) Group Dynamics & Interpersonal Relations
(21) Communication Skills for Managers
(28) Finance I
(47) Mathematics of Finance
(48) Survey of Basic Mathematics I
(52) Law I
(68) General Insurance I (Brokers)
(70) Effective Speaking and Speech Preparation
(74) Shopping Centres and Downtown Retail Locations
(76) Consumer Behaviour
(77) Quantitative Analysis for Marketing Decisions
(79) Operations Research I
(84) Money and Banking
(86) Remedial Mathematics I
(88) Introduction to Travel Counselling

WEDNESDAY 8:00 p.m.

(27) Systems Project Management
(30) Investments and Portfolio Management

THURSDAY 6:00 p.m.

(5) Financial Accounting IV
(7) Management Accounting-Cost

Determination and Analysis
(15) Social Psychology
(16) Introduction to Organizational Behaviour
(29) Finance II
(50) Statistics I
(51) Statistics II
(54) Transportation Law and Government Relations
(65) Appraisal of Real Estate I
(81) General Insurance II (Brokers)
(89) Organizations as Systems (1A)
(91) Quantitative Information for Decisions (2A)
(93) Management of Human Resources (4A)

FRIDAY 6:00 p.m.

(9) Management Accounting Control Systems
(71) Systems Innovation Workshop I

COURSES CREDITED FROM OTHER DEPARTMENTS

Courses from other departments of the Centre for Continuing Education accepted as elective credits in the McGill Certificate in Management Program are as follows:

114-203X 71 Introduction to Greek Mythology (3 credits) page 79
114-300Y 71 Greek Drama and Theatre (3 credits) page 79
114-241X 51 Ancient History (Roman) (3 credits) page 79
260-201X 51 Religious Traditions of the Ancient Near East (3 credits) page 85
260-351X 71 Comparative Religion (3 credits) page 85
495-472X 61 Environmental Law for Citizens (3 credits) page 78
674-505Y 56 Canadian Economic Geography (3 credits) page 78
626-014X 61 Introduction to Management for Women (3 credits) page 85
622-022Y 66 Behavioural Dimensions of Women in Management (3 credits) page 86
684-351X 51 English Composition (3 credits) page 64
686-352X 51 Business Writing (French) (3 credits) page 67

Administrative Officers — **4**
Arabic — **62**

Bachelor of Commerce (Part time) — **109**
Bachelor of Education (Part time) — **28**
Bookstore — **8**

Calendar 1976-77 — **2**
Cancellation of Lectures — **7**
Cancelled Courses — **7**
Certificates
  Administrative Management Society — **111**
  Advanced Technology in Dyeing and Finishing — **54**
  Appraisal Institute of Canada — **112**
  Association for Systems Management — **112**
  Canadian Association for Physical Distribution Management — **113**
  Canadian Credit Institute — **113**
  Canadian Institute of Management (CIM) — **113**
  Canadian Institute of Traffic & Transportation — **115**
  Canadian Institute of Travel Counsellors (Que) — **116**
  Canadian Public Relations Society (Que) — **116**
  Corporation of Chartered Administrators of Quebec — **119**
  Corporation of Chartered Appraisers of Quebec — **119**
  Institute of Internal Auditors — **124**
  Insurance Brokerage of the Province of Quebec — **125**
  Internal Association of Business Communicators — **125**
  Montreal Personnel Association — **125**
  Trust Companies Institute of Canada — **125**
Certificates (McGill)
  Administration — **106**
  Appraisal of Real Estate — **106**
  Banking — **107**
  Business Communications — **107**
  Computer Programming — **55**
  Insurance Brokerage — **107**
  Marketing — **108**
  Proficiency in Languages — **60**
  Systems Design — **108**
  Transportation — **109**
Change of Address — **8**
Chartered Accountancy Program Requirements — **12**
Chinese — **63**
Classrooms — **8**
Community Services Requirements — **24**
Convocation — **8**
Croatoserbian — **63**

Diplomas
  Corporation of Certified General Accountants of Quebec (CGA) — **117**
  Corporation of Industrial Accountants of Quebec (RIA) — **119**
  Institute of Canadian Bankers (ICB) — **121**
  Institute of Chartered Secretaries and Administrators — **123**
  Management — **91**
  Management (Tourism) — **99**

Education
  Requirements — **28**
  Diplomas — **29**
Engineering
  Requirements — **50**
English — **50**
Examinations — **7**

Fees — **6**
French — **66**

General Information — **5**
German — **67**
Grading System — **7**
Greek — **68**

Hungarian — **69**

Italian — **69**

Japanese — **70**

Languages
  Requirements — **60**
  Classification Test — **61**
Liberal Arts
  Requirements — **76**

Management Graduate
  Requirements — **90**
Management Undergraduate
  Requirements — **104**
Master of Engineering — **52**
Masters in Business Administration (MBA) — **93**

Parking — **9**
Penalties — **6**
Portuguese — **70**
Professional French Language Requirement — **14**

Receipts — **8**
Refunds — **6**
Registration Dates — **5**
Rereads — **8**
Russian — **71**

Senior Citizen — **9**
Smoking — **9**
Spanish — **72**

Transcripts — **8**
Transfers — **6**
Translation — **73**

University Centre — **9**

Withdrawals — **6**

CENTRE FOR CONTINUING EDUCATION

APPLICATION FOR CLASSIFICATION TEST

(for more information, see page 61)

Please find enclosed the amount of $5.00
(Cash or Money Order — Cheques not accepted)

I wish to register for the English ☐ French ☐
Classification test to be held on:

ENGLISH COURSES

Monday	August 9	☐
Tuesday	August 17	☐
Thursday	August 19	☐
Wednesday	August 25	☐

FRENCH COURSES

Tuesday	August 10	☐
Wednesday	August 18	☐
Monday	August 23	☐

Important
- Location of test will be given on receipt
- Fee for test not refundable
- Test will start at 7 p.m.

PLEASE PRINT

Name ..... (Family Name) (First Name)

ADDRESS ..... (Number) (Street) (Apt. No.) (City)

Telephone: Office ..... Local ..... Home .....

DATE: ..... SIGNATURE: .....

Mail or bring this application to: CENTRE FOR CONTINUING EDUCATION

McGILL UNIVERSITY
772 SHERBROOKE ST. WEST
MONTREAL H3A 1G1

1976

JANUARY						
S	M	T	W	T	F	S
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4	5	6	7	8	9	10
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18	19	20	21	22	23	24
25	26	27	28	29	30	31

FEBRUARY						
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15	16	17	18	19	20	21
22	23	24	25	26	27	28
29						

MARCH						
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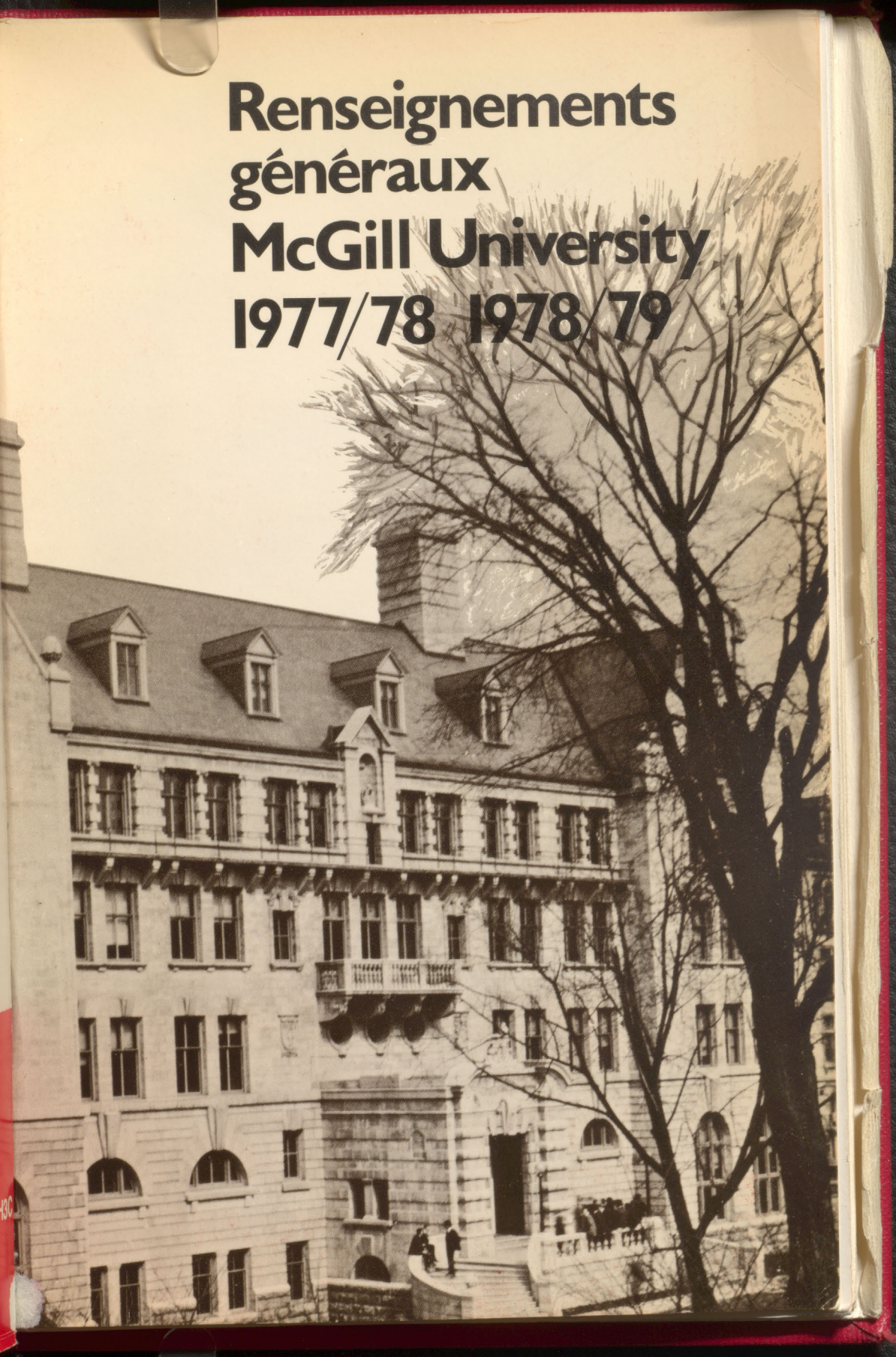
Centre for Continuing Education
McGill University
P.O. Box 6070, Station "A", Montreal, Que. H3C

Renseignements généraux McGill University 1977/78 1978/79



Renseignements généraux

publié par le Bureau de liaison
McGill University

A l'université McGill, la langue d'enseignement est l'anglais. Toutefois, les étudiants qui le désirent peuvent rédiger leurs travaux et examens en français; une bonne connaissance de l'anglais est néanmoins indispensable.

L'Université se réserve le droit de changer sans préavis les renseignements qui paraissent dans cet annuaire, y compris la modification des frais et la révision ou l'annulation de certains programmes.

Les prérequis (pour les étudiants québécois) se trouvent sur le dépliant (Programmes et prérequis) inclus à la fin de cette publication.

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1. Introduction

On peut faire remonter l'origine de l'université McGill à l'année 1813, date à laquelle l'honorable James McGill fit don de 10,000 Livres Sterling à l'Institution royale pour l'avancement des sciences ainsi que de son domaine de 46 acres baptisé "Burnside". L'université fut officiellement fondée en 1812 après avoir obtenu sa charte du Roi George IV; toutefois, l'enseignement proprement dit n'y débuta qu'en 1829 lorsque l'Institut de médecine de Montréal fusionna avec le collège McGill pour former la faculté de médecine.

Depuis ses débuts en qualité de petit collège ne possédant qu'une faculté et 37 étudiants et situé à ce qui était alors la périphérie de Montréal, l'université McGill s'est considérablement développée. Elle compte aujourd'hui au sein de ses douze facultés et de ses huit écoles quelque 13,000 étudiants du 1er cycle à plein temps et plus de 5,000 étudiants inscrits en cycle supérieur. Le centre d'éducation permanente compte pour sa part 14,000 étudiants du soir qui visent l'obtention d'un certificat, d'un diplôme ou d'un grade universitaire.

Deuxième campus, le collège Macdonald qui est situé à Ste-Anne-de-Bellevue, fut fondé en 1907 par feu Sir William C. Macdonald et plus tard rattaché à l'université McGill. C'est là que se trouve la faculté d'agriculture dont fait partie l'école des sciences de l'alimentation. On y poursuit actuellement des recherches dans le domaine des sciences agricoles, des sciences biologiques, des ressources renouvelables et des services d'alimentation et de consommation.

Poursuivant une tradition d'excellence établie de longue date, l'université offre aujourd'hui plus de 4,000 cours différents et des installations de recherches tout à fait modernes.

2. Programmes et prérequis

FACULTÉ D'AGRICULTURE
(Collège Macdonald, Ste-Anne-de-Bellevue)

- Bachelor of Science in Agriculture—B.Sc. (Agr.)

Durée des études/ crédits exigés

3 ans ou 90 crédits

Programme d'étude

Programmes majeurs (Majors Programs) dans les domaines suivants:
Economie agricole
Zoologie
Botanique
Pédologie
Agronomie générale

Caractéristiques du programme

Les étudiants qui s'inscrivent à ce programme reçoivent une formation intensive tant en sciences pures qu'en sciences appliquées touchant à l'agriculture moderne. Les principaux sujets majeurs donnent une formation professionnelle en sciences agricoles.

- Bachelor of Science (Agriculture) in Biological Sciences—B.Sc. (Agr.)

Durée des études/ crédits exigés

3 ans ou 90 crédits

Programme d'étude

Programmes majeurs (Major Programs) dans les domaines suivants:
Botanique
Biologie de l'environnement
Microbiologie
Zoologie

Caractéristiques du programme

Ce programme touche à bon nombre d'aspects fondamentaux de la biologie et vise à une spécialisation des étudiants dans les applications de la biologie aux domaines énumérés ci-dessus.

- Bachelor of Science (Agriculture) in Renewable Resources Development—B.Sc. (Agr.)

Durée des études/ crédits exigés

3 ans ou 90 crédits

Programme d'étude

Programmes majeurs (Major Programs) dans les domaines suivants:
Aménagement et mise en valeur des terres agricoles
Développement des ressources communautaires
Préservation de l'environnement
Aménagement paysager
Economie et gestion des ressources
Ressources de la faune

Caractéristiques du programme

Ce programme permet aux étudiants d'acquérir une vue d'ensemble des ressources renouvelables, des répercussions socio-économiques de l'amenagement et de la mise en valeur des terres agricoles ainsi qu'une connaissance approfondie des disciplines scientifiques de base au programme. Ce programme met l'accent sur l'étude pluridisciplinaire des techniques de préservation.

- Bachelor of Science in Agricultural Engineering—B.Sc. (Agr. Eng.)

Durée des études/ crédits exigés

3 ans ou 96 crédits

Programme d'étude

Programme à sujet majeur (Major Program)

Caractéristiques du programme

Ce programme allie les matières de base communes à tous les programmes de génie aux sciences agricoles et biologiques; il tente d'expliciter l'interaction de certaines réalités de la faune et de la flore. Les diplômés seront ainsi prêts à mettre au point des systèmes destinés à améliorer l'environnement pour ce qui est de la production de cultures, le couvert du bétail, la rentrée des récoltes, la modernisation des techniques de manutention et de traitement des aliments, ainsi que le traitement et l'élimination des déchets agricoles, biologiques et autres. Les étudiants qui obtiennent leur diplôme peuvent devenir membres des ordres d'ingénieurs professionnels de n'importe quelle province canadienne.

Études supérieures

Le grade de Master of Science (M.Sc.) est offert en chimie agricole, agronomie, zoologie, horticulture, parasitologie, phytopathologie, pédologie, entomologie, microbiologie, biologie de la faune, ressources renouvelables et génie rural.

Le grade de Doctor of Philosophy (Ph.D.) est offert en chimie agricole, agronomie, zoologie, parasitologie, phytopathologie, pédologie, entomologie, microbiologie, ressources renouvelables et génie rural.

Diplôme en agriculture

Il s'agit d'un programme de deux ans durant lesquels les étudiants reçoivent une formation pratique en agriculture qui les prépare au métier de cultivateur ou à des travaux étroitement liés au domaine de l'agriculture au niveau de la production. Il n'est pas nécessaire de posséder un diplôme d'études collégiales pour s'inscrire à ce programme; toutefois, on exige des étudiants qu'ils aient une expérience pratique de l'agriculture.

ÉCOLE D'ARCHITECTURE

- *non professionnel:*
  Bachelor of Science (Architecture)—B.Sc. (Arch.)
- *professionnel:*
  Bachelor of Architecture—B. Arch.

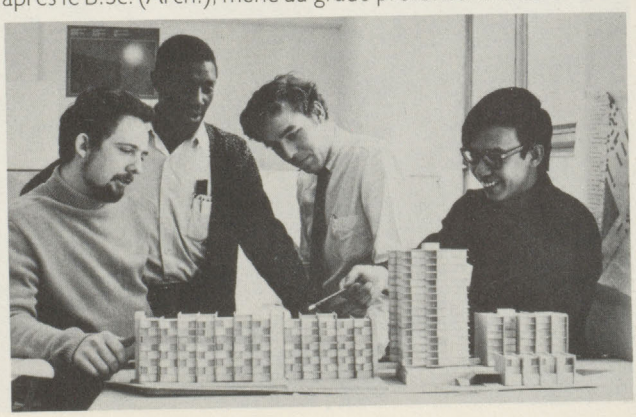
Durée des études

B.Sc. (Arch.): 3 ans au minimum
B.Arch.: 1 an au minimum après obtention du B.Sc. (Arch.)

Caractéristiques du programme

Le programme d'architecture offert par McGill se divise en deux parties. La première partie débouche sur un grade non professionnel, le B.Sc. (Arch.), et prépare aux activités touchant à l'architecture; elle peut également servir d'étape de base à la formation en architecture professionnelle.

La deuxième partie, qui exige un an d'études au minimum après le B.Sc. (Arch.), mène au grade professionnel de B.Arch.



Ce grade est reconnu depuis longtemps par l'Ordre des architectes de la province de Québec et par la Royal Institute of British Architects et permet d'être admis aux deux associations à titre de membre. Tout candidat au B.Arch. doit avoir à son actif au moins six mois d'expérience professionnelle dans ce domaine.

Études supérieures

Tout étudiant titulaire d'un B.Arch. peut poser sa candidature au grade de Master of Architecture (M.Arch.)

FACULTÉ DES ARTS

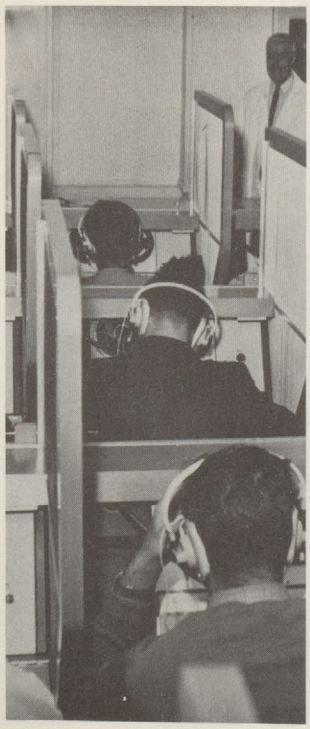
- Bachelor of Arts—B.A.

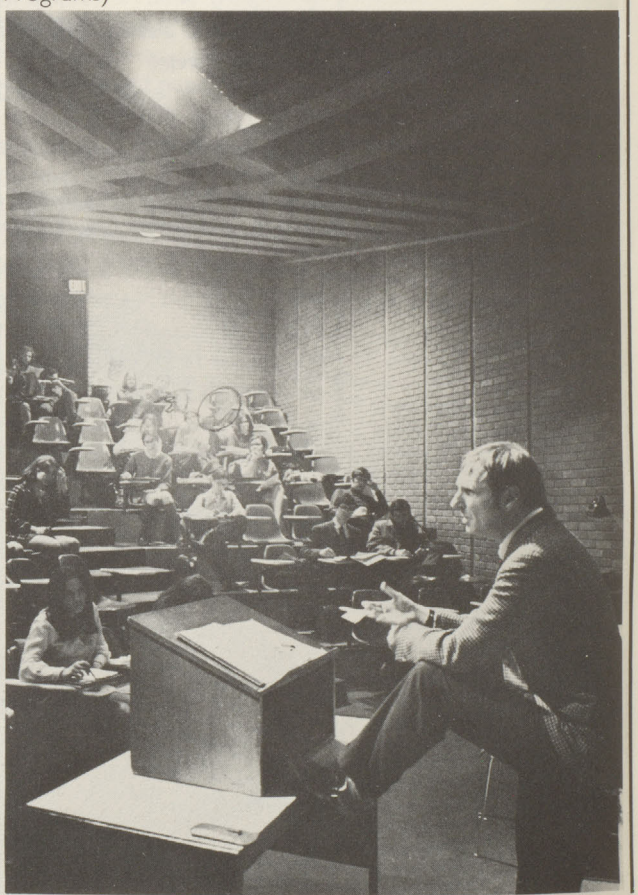
Durée des études/ crédits exigés

90 crédits ou 3 ans (30 crédits par année en règle générale)

Programmes d'études

Programmes de faculté (Faculty Programs)
Programmes à sujet majeur (Major Programs)
Programmes de spécialisation (Honours Programs)
Programmes de spécialisation bidisciplinaire (Joint Honours Programs)





Caractéristiques des programmes

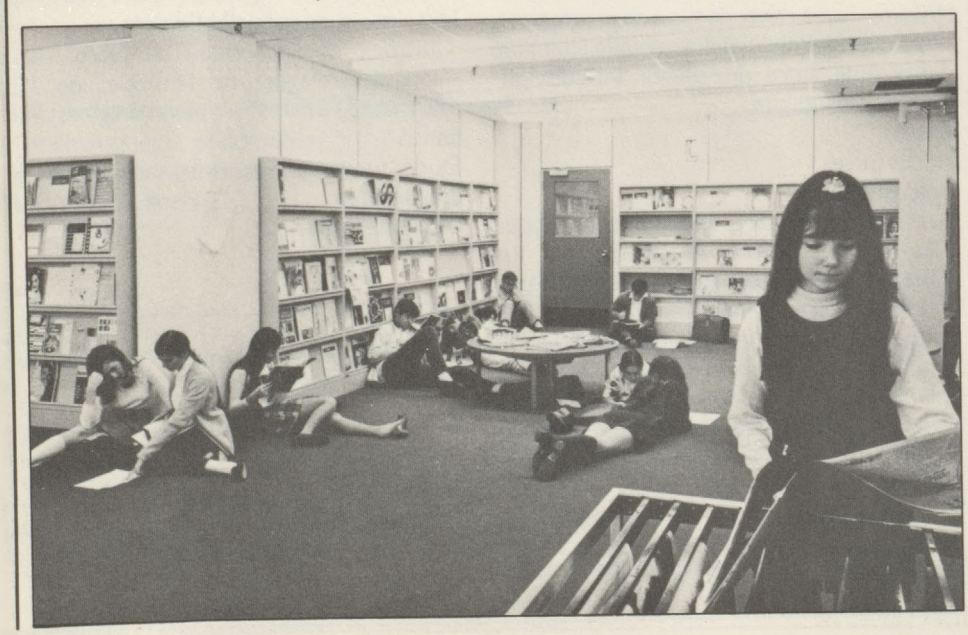
Les *programmes de faculté* (Faculty Programs) menant au B.A. sont offerts dans trois domaines. Les trois-cinquièmes du cours sont précisés, les autres sont laissés au libre choix de l'étudiant soit à la faculté des sciences, soit à la faculté des arts, soit encore, dans certains cas, à d'autres facultés.

Pour ce qui est des *programmes à sujet majeur* (Major Programs), trois-cinquièmes des cours sont précisés au sein du domaine de concentration, et l'étudiant peut choisir ses cours à option parmi les cours proposés par les facultés des arts et des sciences ou, dans certaines cas, par d'autres facultés.

Le *programme de spécialisation* (Honours Program) exige l'étude concentrée d'une ou parfois de deux disciplines. L'étudiant doit répondre aux conditions particulières de son département en fait de spécialisation tout en ayant de bons résultats universitaires. Ce type de programme est généralement choisi par les étudiants qui ont l'intention de poursuivre des études au delà du 1er cycle. C'est normalement au deuxième semestre qu'un étudiant demande son admission à un programme de spécialisation.

La plupart des départements offrent des *programmes de spécialisation bidisciplinaire* (Joint Honours Programs), par exemple, Histoire et Anthropologie. Veuillez consulter les chapitres qui conviennent de la brochure "Announcement" des facultés des arts et des sciences.

Départements de langues vivantes: Les départements de langues vivantes (comme le département d'allemand ou le département d'études hispaniques) organisent des tests de classement afin de placer les étudiants dans les groupes correspondant à leur niveau.



Les programmes de la faculté des arts

B.A. majeur (Major)	B.A. spécialisé (Honours)
Anthropologie	Anthropologie
Histoire de l'art	Histoire de l'art
Études classiques—avec choix de programmes en: culture et société classiques; grec ancien; latin; grec ancien et latin; histoire classique et archéologie; études classiques et helléniques; grec ancien et moderne.	Études classiques—avec choix de programmes en: histoire classique et archéologie; études classiques et helléniques. Spécialisation bidisciplinaire en: études classiques et histoire; anthropologie et archéologie classique.
Économie	Économie
Anglais—avec choix de programmes en: littérature; art dramatique et théâtre; cinéma et communications.	Anglais—avec choix de programmes en: littérature; art dramatique; cinéma et communications.
Français—avec choix de programmes en: littérature française ou littérature québécoise; linguistique française.	Français—littérature française; littérature québécoise.
Géographie—avec choix de programmes en: géographie générale; écologie culturelle; géographie économique; Indiens et Esquimaux du Canada; géographie régionale; réseaux urbains.	Géographie—géographie urbaine et économique; géographie culturelle; géographie générale.
Allemand	Allemand
*Espagnol—dans les domaines suivants: littérature espagnole; littérature hispano-américaine.	Espagnol
Histoire—avec choix de type de programme: par domaine; thématique; double (combiné avec une autre discipline); interdisciplinaire; périodique.	Histoire—avec spécialisation en: histoire de l'Amérique du Nord; de la Grande-Bretagne; de l'Europe; de l'Est asiatique.
Italien	Italien
Études juives	Études juives
Linguistique	Linguistique
Mathématiques—avec importance attribuée à: l'enseignement; la statistique; les mathématiques appliquées; l'informatique; la science actuarielle.	Mathématiques
Philosophie—avec importance attribuée à: la logique et la philosophie des sciences; la théorie des valeurs et la philosophie de la religion; la philosophie du langage; l'épistémologie et la métaphysique; l'histoire de la philosophie.	Philosophie
Sciences politiques	Sciences politiques

*L'espagnol est enseigné au département d'études hispaniques.

Psychologie—avec choix de programmes en: psychologie générale, expérimentale, de l'enfance, du comportement et pathologique; psychologie sociale; psychologie du langage; psychopédagogie; psychologie quantitative; psychologie organisationnelle; psychobiologie.	Psychologie
Études religieuses	Études religieuses
Russe	Russe
Sociologie	Sociologie

B.A. majeur interdisciplinaire (Interdisciplinary Major)

Études africaines
Études canadiennes
Études canadiennes-françaises
Économie et sciences politiques
Histoire et sciences politiques
Relations industrielles avec option en: économie; sociologie.
Études nord-américaines, avec option: le Canada et les États-Unis; les États-Unis.
Études classiques et linguistiques
Études humanistes
Études latino-américaines
Langues modernes
Littératures modernes
Philosophie et psychologie

B.A. spécialisé (suite)

Études extrême-orientales	Études extrême-orientales
Histoire et philosophie des sciences	Histoire et philosophie des sciences
Études du Moyen-Orient	Études du Moyen-Orient

B.A. programmes de faculté (Faculty Programs)

Mathématiques et philosophie
Psychologie et mathématiques
Psychologie générale

Remarques:

(1) Des diplômes de géographie, de mathématiques et de psychologie sont offerts tant par la faculté des arts que par la faculté des sciences.
Des diplômes d'économie, de psychologie et de relations industrielles sont offerts tant par la faculté des arts que par la faculté de gestion.

(2) Les étudiants qui ont obtenu un B.A. ou un B.Sc. en psychologie à McGill et qui désirent poursuivre leurs études dans cette même discipline au niveau de la maîtrise sont généralement tenus de le faire dans une autre université. Les étudiants qui envisagent d'entreprendre des études supérieures dans d'autres universités du Québec sont priés de se renseigner sur le nombre minimal de crédits exigés en psychologie pour être autorisés à poursuivre des études supérieures. La Corporation des psychologues professionnels du Québec exige de ses membres qu'ils détiennent au moins une maîtrise en psychologie.

Études supérieures

Maîtrises es arts

Il est possible de préparer une maîtrise dans l'un des domaines suivants:

*Allemand
*Anglais
*Anthropologie
Communications
*Économie
Éducation (voir *note explicative*)
Espagnol
*Études classiques
*Études islamiques
*Études religieuses
*Français
*Géographie
*Histoire
*Histoire de l'art
Italien
*Linguistique
*Mathématiques
*Philosophie
*Psychologie
*Russe
*Sciences politiques
*Sociologie

Note explicative:
Le grade de Master of Arts est proposé en éducation comparée, orientation, administration pédagogique, psychopédagogie, histoire de l'éducation, philosophie de l'éducation ou éducation physique. (Voir également *faculté des sciences de l'éducation page 24*).

Doctorats

*Les disciplines marquées d'un astérisque peuvent également faire l'objet d'études menant au doctorat.

ÉCOLE SUPÉRIEURE DE BIBLIOTHÉCONOMIE

● Master of Library Science—M.L.S.

Durée des études

2 ans—après un grade de bachelier

FACULTÉ DE CHIRURGIE DENTAIRE

● Doctor of Dental Surgery—D.D.S.

Durée des études

4 ans

Les demandes d'admission à cette faculté peuvent être déposées au cours de la dernière année de CEGEP ou au cours de n'importe quelle année d'étude à l'université. Il est dans l'intérêt de tous les candidats qui font leur demande d'admission à cette faculté durant le cours d'études universitaires d'avoir suivi un cours en physiologie des mammifères (Mammalian Physiology).

Études supérieures

Master of Science in Prosthodontics and Restorative Dentistry—(M.Sc.)
(maîtrise en prosthodontie et dentisterie restauratrice).

Master of Science in Oral Surgery—(M.Sc.)
(maîtrise en chirurgie bucco-dentaire).

FACULTÉ DE DROIT

- Bachelor of Civil Law—B.C.L.
- Bachelor of Laws (Common Law)—LL.B.

Durée des études

B.C.L.: 3 ans au minimum;
LL.B.: 1 an au minimum après le B.C.L.

Conditions d'admission

Les demandes d'admission à cette faculté peuvent être déposées au cours de la dernière année de CEGEP ou au cours de n'importe quelle année d'étude à l'université.

Les titulaires d'un diplôme de CEGEP ne peuvent s'inscrire directement au programme de Bachelor of Laws (LL.B.) mais doivent commencer par suivre le programme de Bachelor of Civil Law (B.C.L.). Par ailleurs, les Barreaux des autres provinces exigent parfois de leurs membres qu'ils aient une formation universitaire plus poussée.

Les candidats sont tenus de parler couramment le français et l'anglais.

Caractéristiques du programme

Le programme du 1er cycle menant au grade de B.C.L. après trois ans d'études prépare les étudiants aux professions juridiques de la province de Québec uniquement.

Le programme national, programme intégré d'études en droit canadien, qui comprend un vaste éventail de cours de droit "canadien" communs aux programmes de droit civil et de droit coutumier (Common Law), est un programme qui dure quatre ans après le CEGEP. Il est ainsi normal qu'un étudiant qui possède son diplôme de CEGEP et qui s'inscrit au programme de B.C.L. poursuive ses études au delà de ce grade pendant un an en vue d'obtenir le grade de LL.B. qui lui permet d'exercer le droit dans les provinces de droit coutumier (Common Law).

Études supérieures

L'institut de droit aérien et spatial décerne les diplômes suivants:

Diploma in Air and Space Law (droit aérien et spatial)
Master of Laws—LL.M.
Doctor of Civil Law—D.C.L.

L'Institut de droit comparé, pour sa part, offre les diplômes suivants:
Master of Civil Law—M.C.L.
Master of Laws—LL.M.
Doctor of Civil Law—D.C.L.

FACULTÉ D'ÉTUDES RELIGIEUSES

Bachelor of Theology—B.Th.

Durée des études/ crédits exigés

3 ans ou 90 crédits

Caractéristiques du programme

Le B.Th. est un grade professionnel préliminaire. Avant de se faire ordonner ministre du culte, tout étudiant titulaire d'un B.Th. doit suivre un stage pratique d'un an dans l'un des collèges théologiques affiliés; *the Montreal Diocesan Theological College* de l'Eglise anglicane du Canada, *the Presbyterian College* ou *the United Theological College*.

A l'instar desdits collèges, la faculté d'études religieuses conseille vivement aux futurs étudiants d'obtenir un B.A. majeur (Major Program) en études religieuses (environ 50% du volume de cours) ou un grade spécialisé en lettres avant de s'inscrire au programme de M.A. ou de S.T.M., puis de se faire ordonner ministre du culte ou de devenir professeur de religion au sein du système scolaire.

Études supérieures

Master of Sacred Theology—S.T.M.
Master of Arts—M.A.
Doctor of Philosophy—Ph.D.

FACULTÉ DE GÉNIE

• Bachelor of Engineering—B.Eng.

Durée des études/ crédits exigés

3 ans au minimum ou de 94 à 100 crédits

Programmes d'études

Génie chimique—programme général (General Program)
Génie civil et mécanique appliquée—programme général (General Program)
Génie électrique—programme général et spécialisé (General and Honours Program)
Génie mécanique—programme général et spécialisé (General and Honours Program)
Mines et géophysique appliquée—programme général (General Program)
Génie métallurgique—programme général (General Program)

Caractéristiques du programme

Les ingénieurs ont pour rôle de trouver des solutions techniques à la crise énergétique, aux problèmes de pollution ainsi qu'aux pénuries d'aliments et de matières premières. Les ingénieurs miniers et métallurgiques participent, tant au Canada que dans le monde entier, à toutes les phases de l'activité industrielle, depuis l'exploration jusqu'à la planification économique.

Les étudiants qui s'intéressent à la lutte contre la pollution ou à certaines activités de gestion peuvent bénéficier de dispositions spéciales au sein de leur programme.

Études supérieures

Master of Engineering (M.Eng.) et Doctor of Philosophy (Ph.D.) en:
Génie chimique
Génie civil et mécanique appliquée
Génie électrique
Génie mécanique
Mines, métallurgie et géophysique appliquée

FACULTÉ DE GESTION

• Bachelor of Commerce—B.Com.

Durée des études/ crédits exigés

3 ans ou 90 crédits. Tout étudiant qui suit un semestre de cours d'été complet peut obtenir ses 90 crédits en deux ans. (Le Centre d'éducation permanente offre un programme de B.Com. du soir à temps partiel).

Programme d'étude

Général avec choix de concentration en: comptabilité; informatique; relations industrielles et relations de travail; commerce international; finances; marketing; sciences du comportement et administration du personnel; politique de l'entrepreneur et petites entreprises; sciences de la gestion (méthodes quantitatives).

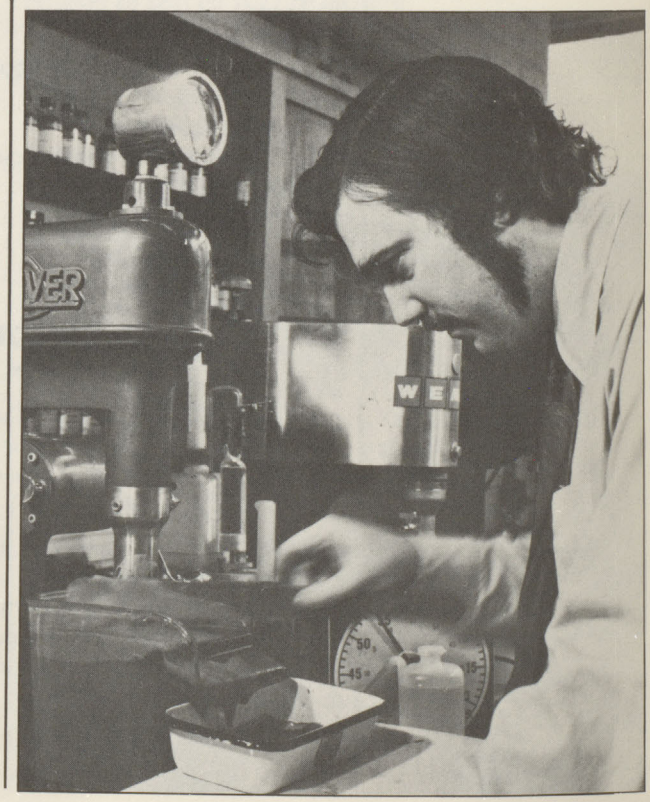
Sujets majeurs (Majors) en: économie; économie et sciences politiques; relations industrielles; mathématiques; psychologie.
Spécialisation (Honours) en: économie; économie et comptabilité.

Caractéristiques du programme

Le programme général se divise en cinq parties:
- un tronc commun principal de 42 crédits, obligatoire pour tous les étudiants;
- un tronc commun accessoire de 12 crédits;
- un groupe de concentration en gestion de 18 crédits qui permet à l'étudiant de se spécialiser dans un domaine particulier de la gestion;
- 12 crédits accumulés en dehors de la faculté;
- 6 crédits en deuxième et troisième années de cours à option sans restrictions.

Tout étudiant qui combine deux groupes de concentration de gestion et qui souhaite qu'ils figurent tous deux sur son relevé de notes final doit veiller à ce qu'ils ne se chevauchent pas et il se voit dispenser du tronc commun accessoire.

Les étudiants préférant une formation plus poussée dans une matière peuvent opter pour un programme à sujet majeur (Major) ou un programme de spécialisation *(Honours)* dans cette matière qui comprend le tronc commun principal de gestion, 36 crédits accumulés dans le département de son choix et les autres crédits accumulés dans les domaines connexes.



Pour devenir comptable agréé, un étudiant doit suivre des cours particuliers de gestion au niveau du 1er cycle, puis, une fois en possession de son B.Com., s'inscrire au centre d'éducation permanente au programme du soir de Licence de comptabilité (Licentiate of Accountancy) tout en effectuant un stage d'un an dans le cabinet d'un membre de l'Institut des comptables agréés du Québec.

Le programme général propose en option un *cours d'administration des services alimentaires.* Ce programme a été conçu pour répondre aux besoins de l'industrie hôtelière en matière d'intégration des concepts et des principes de direction généraux dans une industrie complexe en pleine croissance. Pour être admissible à ce programme, les étudiants doivent avoir suivi les cours du tronc commun principal et de l'un ou l'autre des groupes de concentration de la faculté de gestion au cours de leurs première et troisième années d'études universitaires. Au cours de leur deuxième année, les étudiants doivent suivre avec succès huit cours obligatoires et deux cours à option de l'École des sciences de l'alimentation située au collège Macdonald.

Études supérieures
Master of Business Administration—M.B.A.

ÉCOLE D'INFORMATIQUE

- Master of Science (informatique)—M.Sc.
- Master of Science (appliquées) en informatique—M.Sc. (Appl.)
- Doctor of Philosophy en informatique—Ph.D.

Caractéristiques du programme

McGill n'offre pas de B.Sc. en informatique mais encourage les étudiants à étudier l'informatique de concert avec les disciplines connexes. Les cours sont offerts aux étudiants des trois cycles. Les cours du 1er cycle en informatique sont dispensés par les facultés de génie (Engineering), de gestion (Management), des sciences et des arts (si toutefois, l'étudiant remplit les conditions préalables requises). Les étudiants de la faculté des sciences peuvent suivre un cours d'informatique en *sujet mineur* et l'associer à la poursuite d'un programme de faculté, à sujet majeur ou de spécialisation dans un autre domaine.

FACULTÉ DE MÉDECINE

- Doctor of Medicine, Master of Surgery—M.D., C.M.

Durée des études

5 ans plus un an d'internat après le CEGEP ou 4 ans plus un an d'internat après le grade de bachelier.

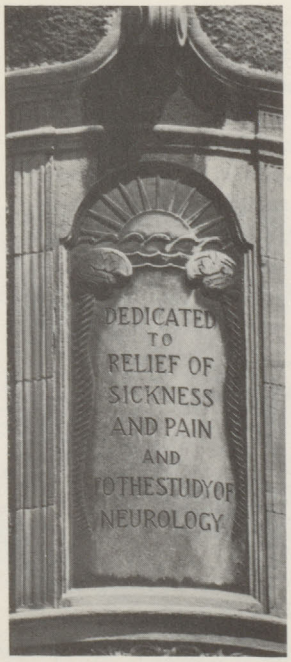
Conditions d'admission

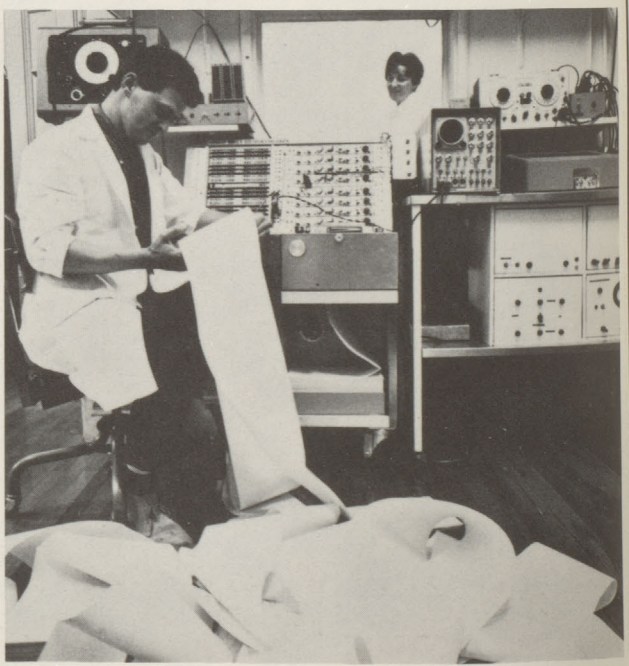
Les demandes d'admission doivent être retirées à la faculté de médecine et remises au bureau des admissions de ladite faculté au plus tard le 1er mars. Tous les candidats sont tenus de passer le *Medical College Admission Assessment Program*. La date limite d'inscription à ce test est généralement en mars. Les demandes d'inscription à ce test peuvent être retirées au bureau de la faculté à compter du début de février. Les étudiants sont admis d'après leurs résultats académiques (dossier complet et MCAAP) ainsi que leurs qualités et attitudes personnelles. Les candidats au programme de cinq ans doivent être de nationalité canadienne ou avoir le statut d'immigrant reçu. Les candidats sont priés de consulter le chapitre intitulé *Admission à un programme contingenté* à la page 36.

Il est important de noter qu'un étudiant ne peut déposer une demande d'admission à la faculté de médecine qu'à deux stades de ses études: (1) lorsqu'il est en deuxième année de CEGEP (programme de médecine de cinq ans) ou (2) en dernière année d'université (programme de médecine de quatre ans). Il doit par ailleurs avoir satisfait aux exigences scientifiques du CEGEP ou durant ses études du 1er cycle.

Études supérieures

Conjointement avec les principaux départements de sciences et les centres hospitaliers universitaires affiliés, la faculté de médecine offre une vaste gamme de programmes menant aux grades de M.Sc. et Ph.D. ainsi qu'à l'internat et à l'externat de McGill. Ces programmes font l'objet d'une description détaillée dans l'*Announcement* consacré aux programmes de formation post-universitaire (Postgraduate training programs for interns, residents, fellows) de la faculté de médecine ainsi que dans l'*Announcement* consacré aux études supérieures de médecine et de sciences connexes.





FACULTÉ DE MUSIQUE

Remarque concernant tous les programmes

Tous les candidats doivent donner une audition d'environ 15 minutes soit pré-enregistrée soit en personne de leur discipline pratique majeure. L'étudiant a intérêt à choisir un morceau représentant différents genres musicaux et susceptible de révéler ses dons musicaux et ses capacités techniques.

- Bachelor of Music—B.Mus.

Durée des études/ crédits exigés

3 ans au minimum ou 90-99 crédits.

Programmes d'études

Programme à sujet majeur (Major Program) en:
composition musicale
histoire de la musique
enseignement de la musique dans les écoles
interprétation.

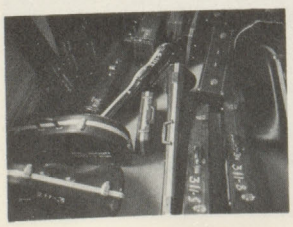
Programme de spécialisation (Honours Program) en:
composition musicale
histoire de la musique
interprétation
théorie.

Sujet mineur (minor) en: interprétation du jazz

Caractéristiques du programme

Composition:
Destiné à ceux dont les intérêts et les dons ont trait à la création musicale.

Histoire de la musique:
Programme destiné aux étudiants qui s'intéressent aux disciplines érudites de la musique et préparant à une spécialisation ultérieure en musicologie.



Enseignement de la musique à l'école:

Programme offrant une formation pratique et théorique aux futurs professeurs de musique. Après obtention de son B.Mus., l'étudiant qui veut devenir professeur doit suivre une année supplémentaire de cours à la faculté des sciences de l'éducation (Programme de diplôme).

Interprétation:

Programme destiné aux étudiants qui désirent allier une option majeure pratique (tous instruments, chant ou direction d'orchestre) à l'étude de domaines théoriques et académiques.

Théorie:

Programme destiné aux étudiants qui veulent se spécialiser en théorie de la musique; des programmes pluridisciplinaires alliant l'étude de la musique à celle de matières littéraires et scientifiques sont offerts en:

anglais
linguistique
mathématiques
philosophie
psychologie

Études supérieures

Le grade de Master of Musical Arts (M.M.A.) est offert dans les domaines suivants:

Composition
Musicologie
Interprétation
Théorie.

Il existe un diplôme de Doctor of Music (D.Mus.) en composition.

Licenciate of Music (L.Mus.)

La Licentiate of Music est accordée après un programme de trois ans destiné tout spécialement aux instrumentistes et chanteurs avancés qui désirent se spécialiser dans la matière pratique de leur choix tout en limitant leurs études théoriques aux domaines élémentaires tels que l'histoire de la musique, la théorie musicale et la formation de l'oreille. Ce programme n'est accessible qu'aux étudiants dont la compétence dans leur matière pratique est au moins du niveau d'un diplôme du CEGEP. Aucun diplôme de CEGEP n'est toutefois exigé.

Concert Diploma

Programme de deux ans après la *licentiate* menant à un diplôme et réservé aux instrumentistes et chanteurs particulièrement talentueux capables de faire carrière en tant qu'interprètes.

McGill Preparatory School of Music

La McGill Preparatory School of Music dispense des cours de toutes les matières pratiques et théoriques au niveau préparatoire.

ÉCOLE DE PHYSIOTHÉRAPIE ET ERGOTHÉRAPIE

- Bachelor of Science en physiothérapie—B.Sc. (Phys. Ther.)
- Bachelor of Science en ergothérapie—B.Sc. (Occ. Ther.)

Durée des études

3 ans pour l'un ou l'autre diplôme

Caractéristiques du programme

On entend par *physiothérapie* le constat et le traitement de blessures et de maladies par l'application spécifique d'exercices thérapeutiques, de chaleur, de lumière, d'eau et d'électricité.

On entend par *ergothérapie* l'application spécifique d'actes réfléchis et de méthodes de travail au traitement des blessures ou de maladies en insistant sur l'évaluation préprofessionnelle et la formation rééducative, la surveillance de programmes personnalisés mis sur pied en fonction d'objectifs précis à court et à long terme en vue de prévenir l'invalidité des malades et de les maintenir en bonne santé physique et psychique.

Études supérieures

Master of Science (Applied) en physiothérapie

FACULTÉ DES SCIENCES

Bachelor of Science—B.Sc.

Durée des études/ crédits exigés

3 ans ou 90 crédits

Programmes d'études

Programmes de faculté (Faculty Programs)
Programmes à sujet majeur (Major Programs)
Programmes de spécialisation (Honours Programs)

Caractéristiques des programmes

Un *programme de faculté* (Faculty Program) consiste en un choix de cours cohérent offrant une concentration utile dans un domaine reconnu. Trois-cinquièmes du volume de cours de l'étudiant sont spécifiés; quant au reste des cours, ils doivent être sélectionnés parmi ceux qui sont offerts par les facultés des arts et des sciences ou, dans certains cas, par d'autres facultés.

Un *programme à sujet majeur* (Major Program) est davantage spécialisé et généralement axé sur une discipline ou un département particuliers. Entre trois et quatre-cinquièmes du volume de cours sont spécifiés, le reste devant être choisi parmi les cours offerts par les facultés des arts et des sciences ou, dans certains cas, par d'autres facultés.

Un *programme de spécialisation* (Honours Program) exige de l'étudiant qu'il obtienne d'excellents résultats universitaires et requiert un très haut niveau de spécialisation. Ce genre de programme est généralement choisi par les étudiants qui entendent poursuivre des études supérieures.

Les programmes de la faculté des sciences

B.Sc.—programmes à sujet majeur (Major Program)

Biochimie

Biologie—avec options en: comportement des animaux; biologie cellulaire, moléculaire et du développement; écologie; génétique humaine; biologie maritime; neurobiologie et physiologie comparée; botanique.

Chimie—avec domaines de spécialisation en: chimie organique; chimie minérale; chimie analytique; chimie physique.

Cristallographie (département des sciences géologiques)

Géographie—avec options en: problèmes mondiaux; géographie économique; urbaine; culturelle et écologique; physique; géomorphologie; hydrologie; climatologie; biogéographie et sols; géographie régionale et technique.

Géophysique, Terre solide

Mathématiques—avec accent mis sur: l'enseignement; les statistiques; les mathématiques appliquées; l'informatique; la science actuarielle.

Météorologie

Microbiologie et immunologie

Physiologie et physique

Physique

Psychologie—avec options en: psychologie générale; psychologie expérimentale; psychologie de l'enfance; psychologie du comportement et pathologique; psychobiologie; psychologie quantitative

Sciences anatomiques

Sciences géologiques

B.Sc.—programmes de spécialisation (Honours Program)

Biochimie

Biologie

Chimie

Cristallographie

Géographie

Géophysique, Terre solide

Programme interdépartemental d'immunologie: offert conjointement par les départements de biochimie, microbiologie et immunologie et de physiologie.

Mathématiques

Météorologie—avec options en: météo physique; dynamique; climatologie

Microbiologie et immunologie

Physiologie—avec option en: neurophysiologie; physiologie

Physique

Psychologie

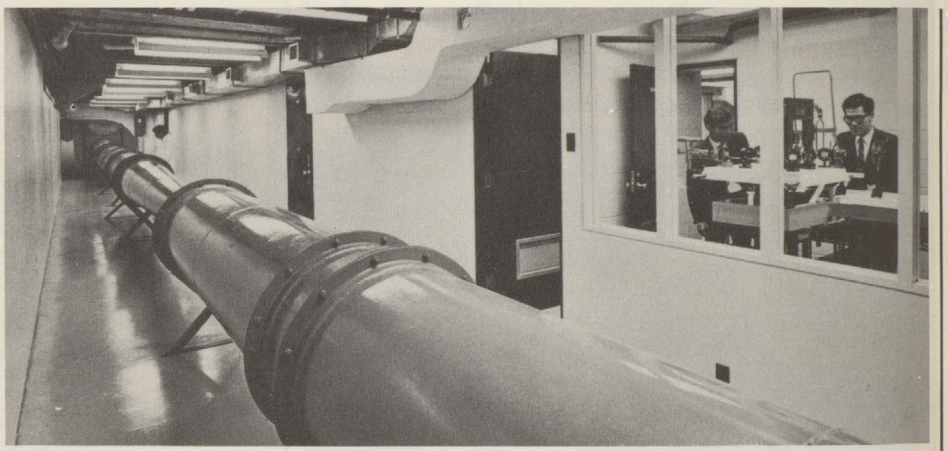
Sciences anatomiques

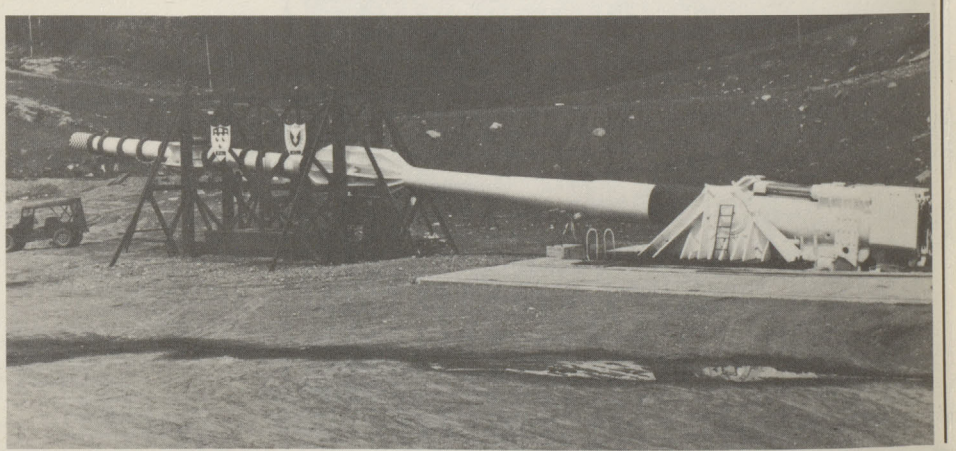
Sciences géologiques

B.Sc.—programmes de faculté (Faculty Programs)

Sciences anatomiques
Biochimie
Biogéographie
Biologie
Chimie bioanalytique ou géoanalytique
Chimie et sciences biologiques
Chimie minérale analytique
Chimie radioanalytique
Climatologie
Dynamique des océans et de l'atmosphère
Géophysique A,B
Géomorphologie
Hydrologie
Géologie maritime
Mathématiques et biologie
Mathématiques et chimie
Mathématiques, chimie et physique
Mathématiques et informatique
Mathématiques et physique
Mathématiques et psychologie
Microbiologie et immunologie
Paléobiologie
Physique
Physiologie
Psychologie
Études quaternaires

Remarque:
Les étudiants qui ont obtenu un B.A. ou un B.Sc. en psychologie à McGill et qui désirent poursuivre leurs études dans cette même discipline au niveau de la maîtrise sont généralement tenus de le faire dans une autre université. Les étudiants qui envisagent d'entreprendre des études supérieures dans d'autres universités du Québec sont priés de se renseigner sur le nombre minimal de crédits exigés en psychologie pour être autorisés à poursuivre des études supérieures. La Corporation des psychologues professionnels du Québec exige de ses membres qu'ils détiennent au moins une maîtrise en psychologie.





Maîtrises

Études supérieures

Des grades de maîtrise sont offerts dans les domaines suivants:

*Chimie agricole
*Génie agricole
*Agronomie
*Anatomie
*Zoologie
*Biochimie
*Biologie
*Chimie
Cristallographie
Communications électriques
*Entomologie
Mécanique des fluides
*Géographie
*Sciences géologiques
Géophysique
Glaciologie
Horticulture
*Orthophonie et audiologie
*Informatique
*Sciences de la mer
*Mathématiques
*Météorologie
*Microbiologie et immunologie
*Microbiologie (Collège Macdonald)
*Génie minier et métallurgique et Géophysique appliquée
*Parasitologie
*Pathologie
*Pharmacologie
*Physique
*Physiologie
*Phytopathologie
*Psychologie
*Ressources renouvelables
*Science du sol
Biologie de la faune.

Maîtrises de sciences (appliquées)

Des maîtrises de sciences (appliquées) sont offertes en: informatique, sciences géologiques (génie, géologie ou exploration minérale), orthophonie et audiologie, microbiologie et immunologie, sciences infirmières, physiothérapie, psychologie.

Doctorats

Un M.D. ou un D.D.S. est exigé pour les autres programmes de maîtrise de sciences.
*Un doctorat est offert dans chacune des matières précédées d'un astérisque (*) dans la liste des maîtrises proposées.

ÉCOLE DES SCIENCES DE L'ALIMENTATION

(Collège Macdonald, Ste-Anne-de-Bellevue)

- Bachelor of Science en science de l'alimentation et de la consommation—B.Sc. (F.Sc.)

Durée des études/ crédits exigés

3 ans ou 90 crédits au total

Programme d'étude

Programmes à sujets majeurs (Major Programs) offerts dans les domaines suivants: services au consommateur; nutrition; chimie alimentaire; administration des aliments; diététique; sciences de l'alimentation.

Caractéristiques du programme

Ce programme d'étude offre un certain nombre de majeurs connexes dans le domaine des sciences de l'alimentation et de la consommation. Selon le majeur choisi, l'étudiant ayant achevé ses études

- —est prêt à fournir au consommateur toutes sortes de services d'information
- —possède la formation voulue pour devenir professeur d'économie ménagère*
- —est en mesure d'exercer le métier de diététicien ou de spécialiste en technologie de l'alimentation
- —peut se lancer dans une carrière axée sur la recherche et le développement
- —peut poursuivre des études supérieures dans différents domaines scientifiques.

FACULTÉ DES SCIENCES DE L'ÉDUCATION

● Bachelor of Education—B.Ed.

Programmes d'études

Enseignement élémentaire: enseignement préscolaire (3 à 5 ans); élémentaire premier cycle (5 à 8 ans); élémentaire deuxième cycle (8 à 11 ans).

ou

Enseignement secondaire: programme majeur (Major Program) ou programme général (General Program) (voir note (1) pour les matières)

ou

Domaines spécialisés (voir note (2) pour les matières)

Durée des études/ crédits exigés

3 ans ou 90 crédits.

Caractéristiques du programme

Le programme de B.Ed. prépare l'étudiant à une carrière d'enseignant au niveau de l'élémentaire ou du secondaire. A la fin du premier semestre, l'étudiant choisit avec l'aide d'un conseiller pédagogique un domaine de spécialisation. En plus de son diplôme, l'étudiant qui a suivi le programme avec succès recevra un Permis d'enseigner (valide pour une durée de cinq ans). Après deux années d'enseignement dans la province de Québec, il lui sera émis un Diplôme d'enseignement permanent.

1. *Majeurs du programme*
   Anglais*; anglais langue seconde*; arts; biologie*; chimie*; économie ménagère; éducation physique*; études religieuses (catholique*, protestante* ou juive); français élémentaire; français langue seconde*; géographie*; histoire*; langues modernes (allemand*, espagnol* ou italien*); latin*; mathématiques*; physique*.

*Tout étudiant qui vise le grade de B.Ed. (Home Ec.) doit suivre pendant deux ans un programme d'économie ménagère à l'école des sciences de l'alimentation et passer une année à la faculté des sciences de l'éducation; pour les conditions d'admission, voir faculté des sciences de l'éducation.

Les programmes généraux destinés aux professeurs du secondaire qui enseignent deux de ces disciplines sont marqués d'un astérisque (*).

2. *Domaines spécialisés:*
   Arts, économie ménagère, éducation physique, études religieuses (protestante et catholique), études juives, et français (au niveau de l'école élémentaire). Veuillez vous adresser au directeur du département pour tous renseignements concernant les conditions d'admission particulières.

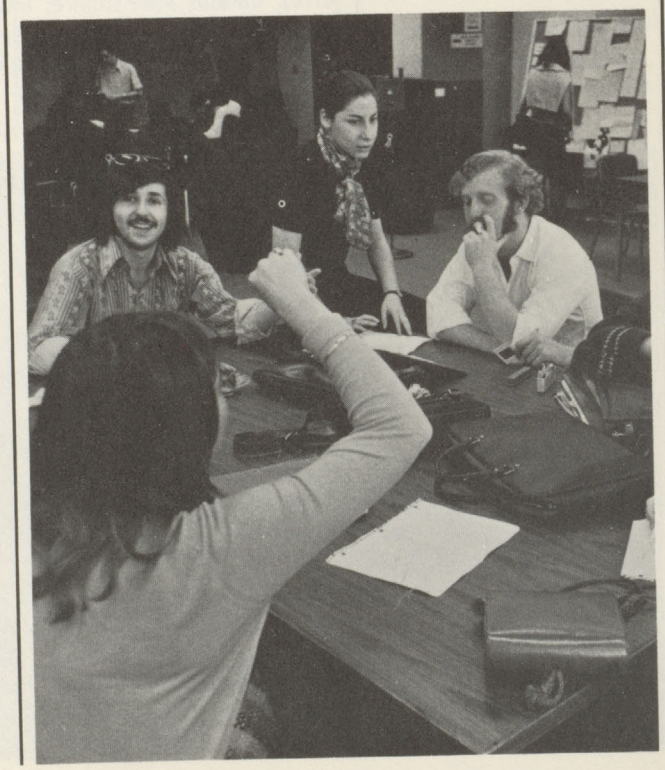
Les candidats qui ont l'intention d'enseigner une langue seconde ou une langue étrangère et les candidats dont la langue maternelle n'est pas l'anglais pourront être soumis à des tests de langue (voir *politique linguistique* page 53).

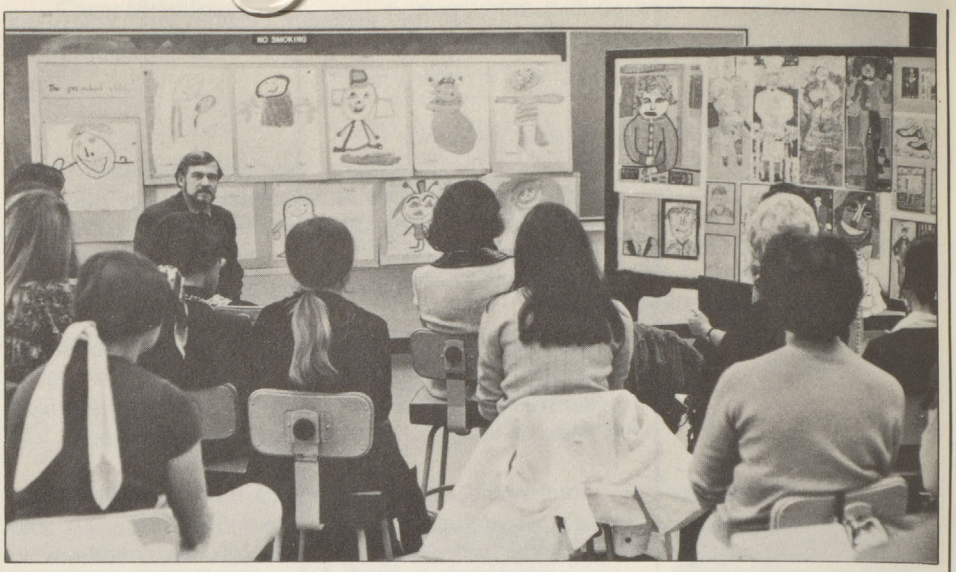
Remarque

Tout candidat au programme de B.Ed. qui a l'intention d'enseigner dans une autre province que le Québec est tenu de demander les renseignements relatifs aux conditions au ministère provincial de l'Education qui convient.

McGill Diploma in Education

Programme d'un an menant au brevet d'enseignant, réservé aux titulaires d'un grade universitaire. Etant donné que les conditions d'admission diffèrent selon les options, les candidats que ce diplôme intéresse sont priés de consulter la brochure *Announcement* de la faculté des sciences de l'éducation.





Programme de diplôme

Option secondaire: Ce programme offre des cours en psychopédagogie, en histoire et philosophie de l'enseignement, en langue et autres média, ainsi qu'en études et instruction. Tout étudiant doit subir deux inspections et donner deux heures de cours dans des écoles secondaires sélectionnées durant l'année.

Liste des matières: *anglais; anglais langue seconde; arts; biologie; chimie; économie ménagère; éducation physique; études religieuses (catholique, protestante ou juive); français élémentaire; français langue seconde; géographie; histoire; langues modernes (allemand, espagnol ou italien); latin; mathématiques; musique; physique.

Option élémentaire: Les étudiants peuvent opter pour l'enseignement aux très jeunes enfants (du jardin d'enfants à la 3e année) ou aux enfants plus âgés (de la 4e à la 7e année).

Français élémentaire: Il existe un programme qui prépare les candidats à l'enseignement d'autres domaines du français au niveau élémentaire. Il est indispensable de parler couramment le français.

Études supérieures

Master of Education en: orientation; administration pédagogique; éducation spéciale; enseignement de la lecture; enseignement de matières; enseignement de l'anglais langue seconde. Le grade de Doctor of Education est offert en orientation (Counsellor Education).

La faculté des études supérieures et de la recherche propose des maîtrises (Master of Arts) dans les domaines des sciences de l'éducation suivants: éducation comparée; orientation; administration pédagogique; psycho-pédagogie; histoire de l'éducation; philosophie de l'éducation; éducation physique.

Autres programmes

Certificat technico-professionnel ou certificat de formation commerciale. Il s'agit d'un programme d'un an auquel peuvent s'inscrire les étudiants titulaires d'un diplôme d'enseignement professionnel d'un CEGEP ou d'un diplôme équivalent. Avant d'être admis à l'un ou l'autre de ces programmes, les étudiants devront subir un examen portant sur leur culture générale, sur la formation spécialisée qu'ils ont reçue et sur leur expérience professionnelle.

Les programmes à *temps partiel*, de *formation en cours d'emploi* ou de *certificat* exigent des candidats qu'ils possèdent un permis d'enseignement du Québec ou un diplôme équivalent. Ces programmes sont offerts en:

Enseignement de jardin d'enfants
Education spéciale
Enseignement technico-professionnel
Langues secondes
Enseignement de la lecture
Média pédagogiques
Formation commerciale

ÉCOLE DES SCIENCES INFIRMIÈRES

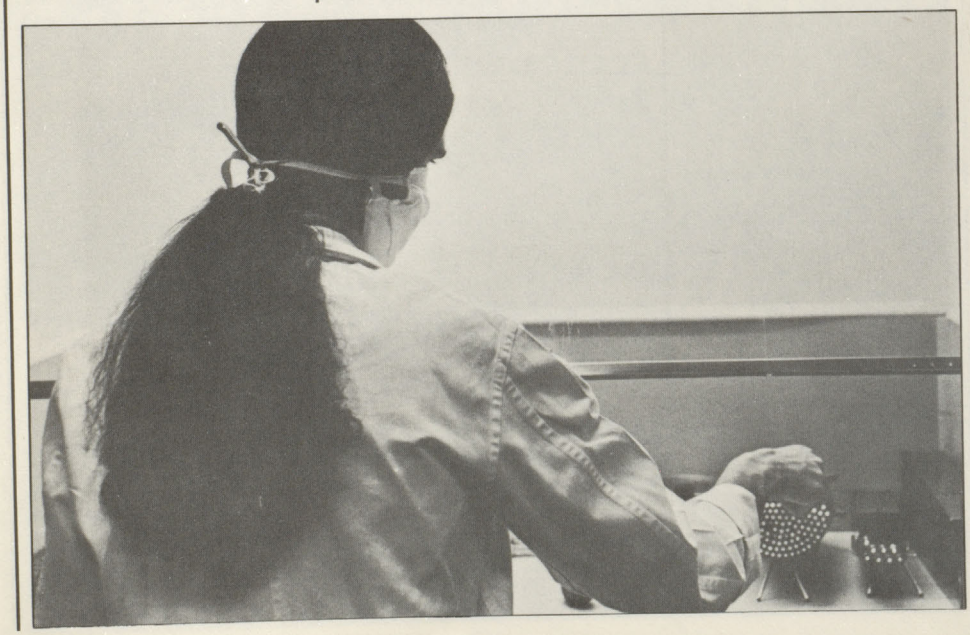
- Bachelor of Science en sciences infirmières—B.Sc.(N.)

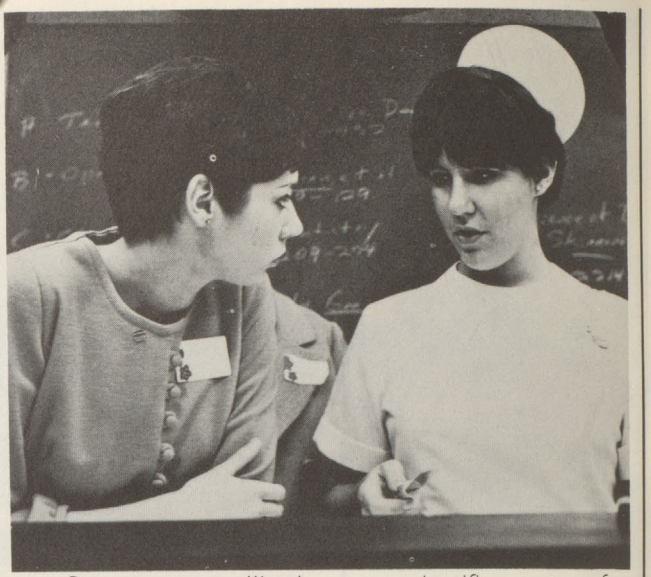
Durée des études

3 ans

Caractéristiques du programme

Bien que les étudiants qui s'inscrivent à ce programme possèdent généralement un D.E.C. en sciences de la santé, ledit programme est accessible également aux infirmier(e)s diplômé(e)s répondant aux conditions préalables.





Ce programme allie des cours scientifiques et professionnels à une expérience pratique dans les centres hospitaliers universitaires de McGill et certaines organisations communautaires. C'est aux mois de mai et juin des deux premières années de ce programme que les étudiants suivent un stage intensif. Le programme exige aussi des étudiants qu'ils effectuent un internat de 2 à 4 mois à la fin de leur troisième année d'études.

Études supérieures
Master of Science (Appliquées)—M.Sc. (Appl.)
Master of Nursing (Enseignement)—M.N. (Teach.)

ÉCOLE DE SERVICE SOCIAL

Bachelor of Social Work—B.S.W.

Durée des études/ crédits exigés

3 ans ou 90 crédits

Caractéristiques du programme

Le B.S.W. prépare les étudiants à toute une gamme de carrières dans le domaine du service social. Tout titulaire d'un B.S.W. peut devenir membre de la corporation professionnelle des travailleurs sociaux du Québec et de l'association canadienne des travailleurs sociaux.

Le programme de B.S.W. qui dure trois ans comprend des cours spécialisés, des stages sous surveillance et des cours ayant trait à l'exercice de cette profession à choisir principalement parmi les cours de sciences humaines et de psychologie.

Études supérieures
Master of Social Work—M.S.W.
Diploma in Advanced Practice

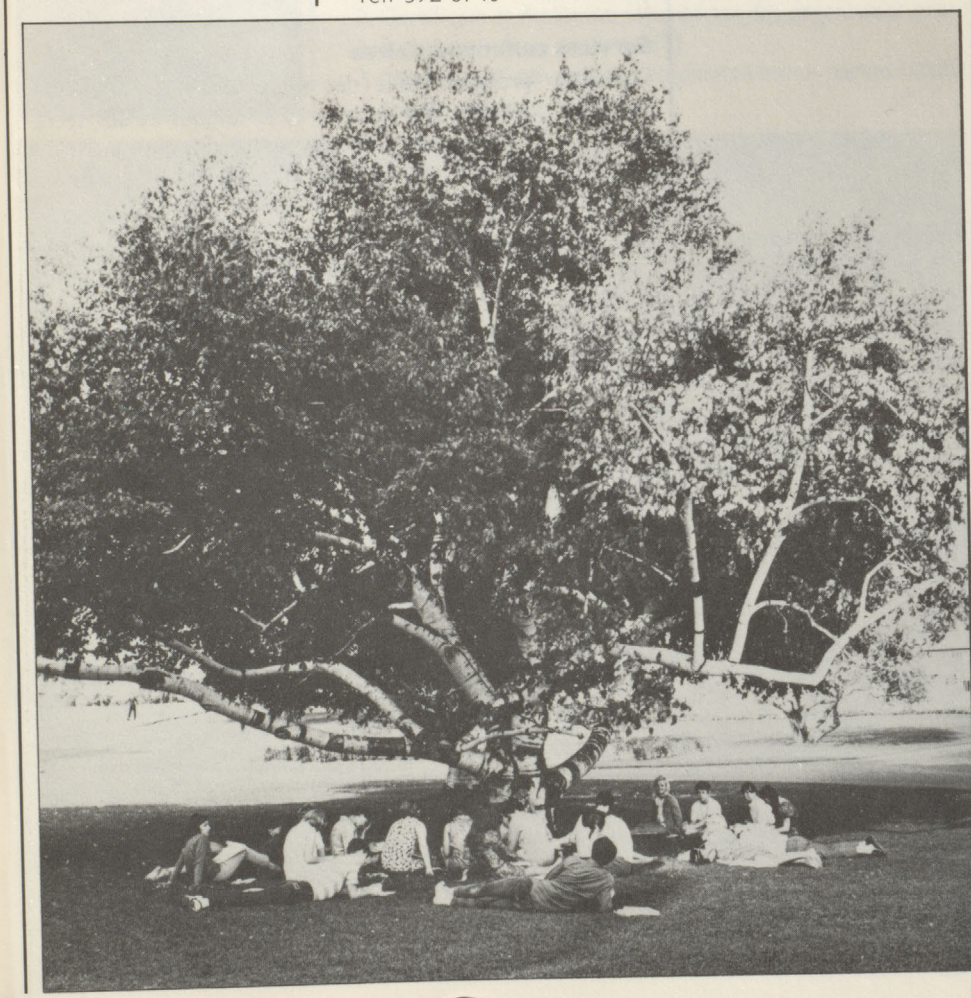
SESSION D'ÉTÉ

Il est conseillé aux étudiants satisfaisant aux conditions préalables nécessaires qui souhaitent hâter le cours de leur programme universitaire ou combler leurs lacunes universitaires de suivre des cours d'été comportant des crédits normaux.

Le programme d'été comprend des cours de premier cycle donnés par les facultés des arts, des sciences de l'éducation, de génie, de gestion, de musique, des sciences, d'études religieuses et d'agriculture.

La session d'été se divise en deux périodes: la première a lieu de la mi-mai à la fin juin et la deuxième du début juillet à la mi-août. Pour de plus amples renseignements au sujet des cours proposés et des conditions d'admission, on est prié de s'adresser à:

Summer Session Office
McGill University
P.O. Box 6070, Station A,
Montréal, (Québec) H3C 3G1
Tél: 392-6740



CENTRE D'ÉDUCATION PERMANENTE

Pavillon Strathcona
722 ouest, rue Sherbrooke
Montréal (Québec)
H3A 1G1
392-6704 ou 392-5244

Les départements du centre d'éducation permanente dont les noms suivent offrent des cours du soir d'intérêt personnel, universitaire et professionnel:

Services communautaires (Community Services)
Génie (Engineering)
Langues vivantes (Languages)
Arts libéraux (Liberal Arts)
Gestion (Management)

Les programmes du centre d'éducation permanente sont avant tout des programmes d'étude à temps partiel menant à des diplômes ou des certificats, bien que bon nombre de cours non affectés d'un coefficient de crédits soient dispensés aux étudiants que cela intéresse d'un point de vue purement personnel.

Services communautaires

Formation professionnelle des secrétaires médicales, des assistants dentaires, des secrétaires juridiques et des secrétaires juridiques de direction. Le centre dispense aussi des cours de perfectionnement professionnel aux membres de diverses professions qui désirent étendre leur savoir.

Génie

Certificat de technicien supérieur de teinture et de finissage des textiles; certificat de programmeur; cours généraux.

Langues vivantes

Certificats de compétence en anglais, français, allemand, italien, russe ou espagnol; diplôme de traduction (anglais/français, français/anglais); cours d'arabe, de chinois, de serbocroate, de grec moderne, de japonais et de portugais.

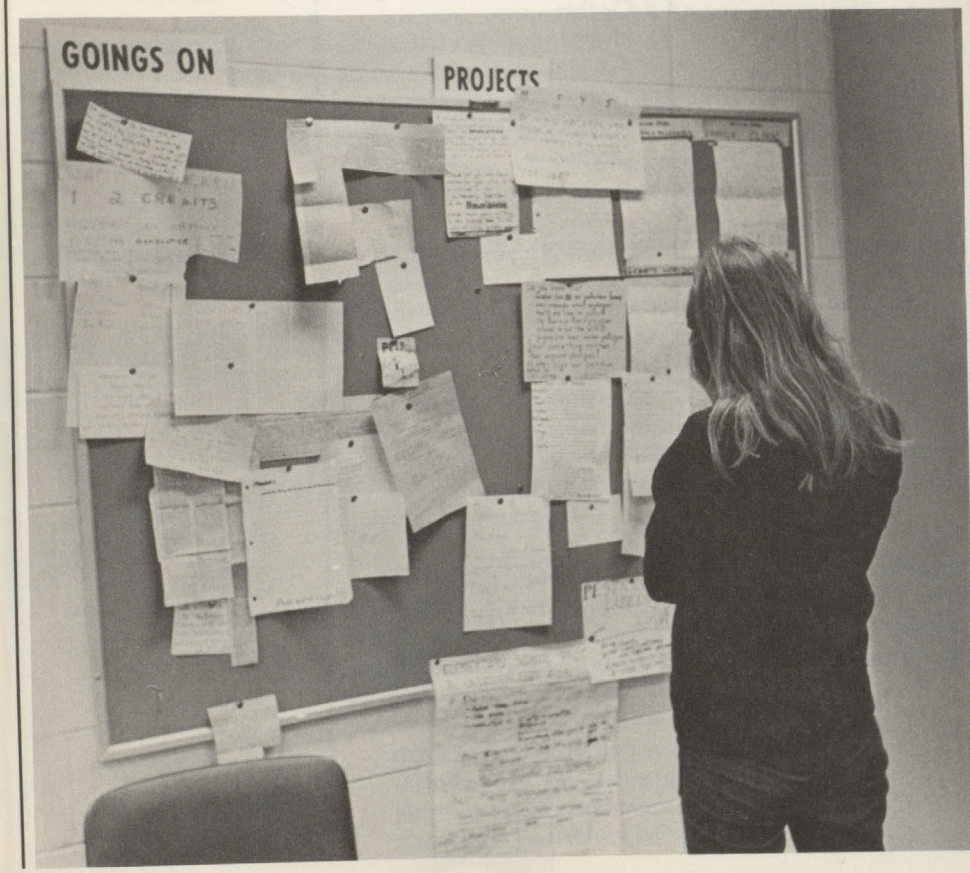
Arts libéraux

Communications; comportement humain; études canadiennes; cours à l'intention des femmes et autres cours généraux.

Gestion

Des cours de gestion à temps partiel sont donnés le soir pour satisfaire aux conditions de trois genres de programmes:

1. Certificat de gestion de McGill dans les domaines suivants: administration; évaluation immobilière; opérations bancaires; communications commerciales; courtage d'assurances; marketing; études des systèmes; transports.
2. Certificats et diplômes délivrés par des organismes professionnels (voir remarque*)
3. Grade de B.Com. pour les étudiants à temps partiel admis à la faculté de gestion.



***Remarque**

Parmi les diplômes et certificats délivrés par des organismes professionnels, certains requièrent des candidats qu'ils possèdent une expérience pratique antérieure ou qu'ils soient membre de l'organisme en cause. Pour de plus amples détails, veuillez consulter l'annonce du centre d'éducation permanente. Voici néanmoins une liste partielle de ces organismes:

Administrative Management Society
Institut canadien des évaluateurs
Association pour la gestion des systèmes et méthodes
Canadian Association for Physical Distribution Management
Institut canadien de gestion
Institut canadien du crédit
Canadian Institute of Traffic and Transportation
Canadian Institute of Travel Counsellors (Québec)
Société canadienne des relations publiques (Québec)
Corporation professionnelle des comptables généraux licenciés du Québec
Corporation professionnelle des administrateurs agréés du Québec
Corporation professionnelle des comptables en administration industrielle du Québec
Institut des banquiers canadiens
Institut des secrétaires et administrateurs agréés au Canada
Institut des vérificateurs internes
Association des courtiers d'assurances de la province de Québec
International Association of Business Communicators
Association du personnel de Montréal
Trust Companies Institute of Canada
Corporation professionnelle des évaluateurs agréés du Québec

3. Admissions

Tout titulaire d'un Diplôme d'Etudes Collégiales est admissible aux programmes des facultés et écoles suivantes: agriculture, architecture, arts, chirurgie dentaire, sciences de l'éducation, sciences alimentaires, droit, gestion, médecine, musique, sciences infirmières, physiothérapie et ergothérapie, études religieuses, service social et sciences. Le bureau des admissions de l'université examine *uniquement* les candidatures intéressant les facultés et écoles suivantes: architecture, arts, sciences de l'éducation, génie, gestion, sciences infirmières, physiothérapie et ergothérapie, service social et sciences.

L'année universitaire débute à la mi-septembre et se termine au début de mai. C'est en septembre que la plupart des étudiants entrent à McGill, mais il est également possible d'être admis en janvier aux programmes des facultés suivantes: agriculture, arts, sciences de l'éducation, génie, sciences alimentaires, gestion, musique (quelques programmes seulement), études religieuses et sciences.

Procédures à suivre

Tout étudiant qui désire entrer à McGill au mois de septembre devra se procurer les formulaires de demande d'admission et les remettre dûment remplis avant le premier mars (à l'exception des programmes dispensés au collège Macdonald). Les étudiants qui désirent entrer à McGill au mois de janvier devront se procurer les formulaires de demande d'admission et les remettre dûment remplis avant le premier novembre. Toute demande d'admission doit être accompagnée d'un montant de $15 non remboursable.

Il existe plusieurs types de formulaires de demande d'admission aux diverses facultés et écoles de McGill. Afin d'éviter toute méprise, on voudra bien noter que le bureau des admissions de l'université distribue deux sortes de formulaires aux étudiants du Québec:

L'enveloppe blanche:
demandes d'admission aux facultés suivantes: architecture, arts, génie, gestion, sciences infirmières, physiothérapie et ergothérapie, sciences et service social.

L'enveloppe rose:
demandes d'admission à la faculté des sciences de l'éducation.

Vous pouvez vous procurer ces formulaires de demande soit auprès du conseiller de votre collège, soit en écrivant ou en téléphonant à l'adresse suivante:

Bureau des admissions
Université McGill
C.P. 6070, Station A
Montréal (Québec) H3C 3G1
Tel: 392-5300

Les facultés dont le nom suit distribuent elles-mêmes les formulaires de demande d'admission qui leur sont propres:

Agriculture et sciences alimentaires: *(enveloppe verte)*
Le régistraire
Collège Macdonald
Ste-Anne de Bellevue
(Québec) H0A 1C0
Tél: 457-6580

Chirurgie dentaire:
Faculté de chirurgie dentaire
3640, rue University
Montréal (Québec) H3A 2B2
Tél: 392-4923

Droit:
Préposé aux admissions
Faculté de droit
3644, rue Peel
Montréal (Québec) H3A 1W9
Tél: 392-5104

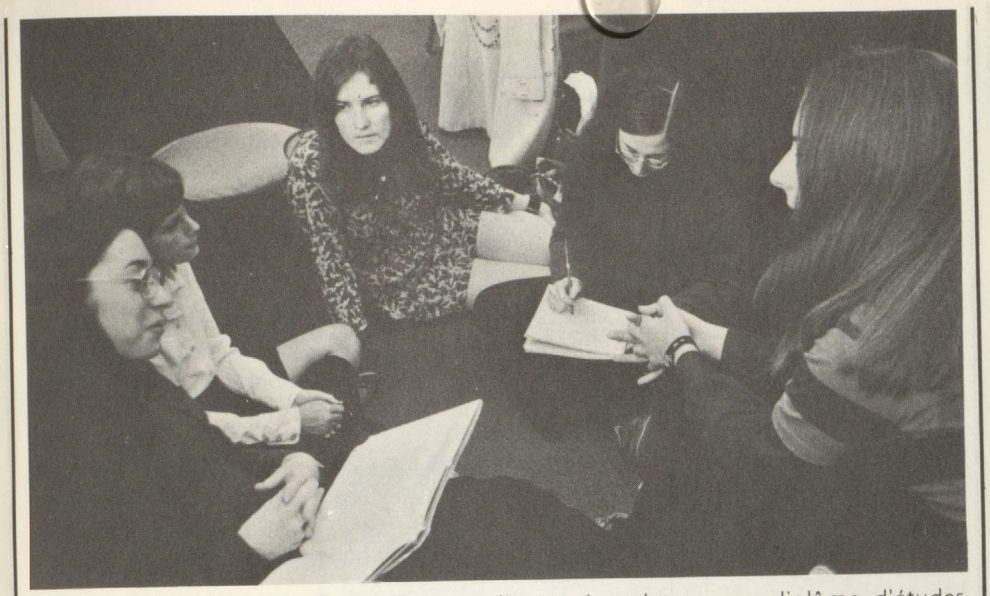
Médecine:
Préposé aux admissions
Bureau des admissions
Faculté de médecine
3655, rue Drummond
Montréal (Québec) H3G 1Y6
Tél: 392-4232

Musique:
Faculté de musique
Bureau des admissions
555 ouest, rue Sherbrooke
Montréal (Québec) H3A 1E3
Tél: 392-4501

Études religieuses:
Faculté d'études religieuses
3520, rue University
Montréal (Québec) H3A 2A7
Tel: 392-4828

Conditions d'admission

Tout titulaire d'un Diplôme d'Etudes Collégiales peut déposer une demande d'admission en première année d'un programme d'études universitaires comptant 90 crédits.



Critères de sélection

Tout étudiant qui a obtenu son diplôme d'études collégiales après la période d'études minimale requise, sans avoir subi aucun échec et dont le programme d'études prépare au programme auquel il souhaite s'inscrire, est généralement admis à McGill. Le cas des étudiants qui ont mis plus de deux ans à obtenir leur DEC fera l'objet d'une étude individuelle. Les étudiants seront admis au programme de leur choix dans toute la mesure du possible; toutefois, l'effectif de certains programmes est limité, notamment au sein des écoles et facultés d'architecture, de chirurgie dentaire, de sciences de l'éducation, de droit, de médecine, de sciences infirmières, de physiothérapie et ergothérapie et de service social.

Les renseignements donnés ci-après intéresseront les étudiants désireux de s'inscrire à l'une des facultés et écoles pour lesquelles il faut déposer sa candidature auprès du bureau central des admissions de l'université. Les facultés d'agriculture, de chirurgie dentaire, de droit, de médecine, de musique et d'études religieuses suivent des procédures différentes; les étudiants sont invités de s'adresser directement à la faculté en question.

Préavis d'admission conditionnelle

C'est au mois d'avril ou au début du mois de mai que l'université McGill envoie à tout candidat satisfaisant aux conditions d'admission un préavis d'admission conditionnelle. Seuls les étudiants qui auront remis tous les documents* exigés à l'appui de leur demande au bureau des admissions avant le premier mars pourront recevoir un tel préavis:

* a) Le relevé officiel (deux si possible) indiquant tous les cours suivis et les notes obtenues jusqu'à la fin de la session d'automne. Ce relevé devra également comprendre la liste des cours auxquels l'étudiant est inscrit pour la session d'hiver. Ce document doit

obligatoirement être adressé directement à McGill par le CEGEP ou l'établissement fréquenté par l'étudiant.

b) Une photocopie du certificat de fin d'études secondaires (Secondaire IV et V ou équivalent), ainsi qu'une liste intégrale des examens subis et des notes obtenues.

c) Le CEGEP fréquenté par l'étudiant devra faire parvenir au bureau des admissions au début du mois de juin un relevé complet de ses notes finales indiquant les résultats finals et précisant qu'il a obtenu son diplôme d'études collégiales. L'étudiant recevra alors une lettre officielle d'admission ainsi que les formulaires d'inscription nécessaires.

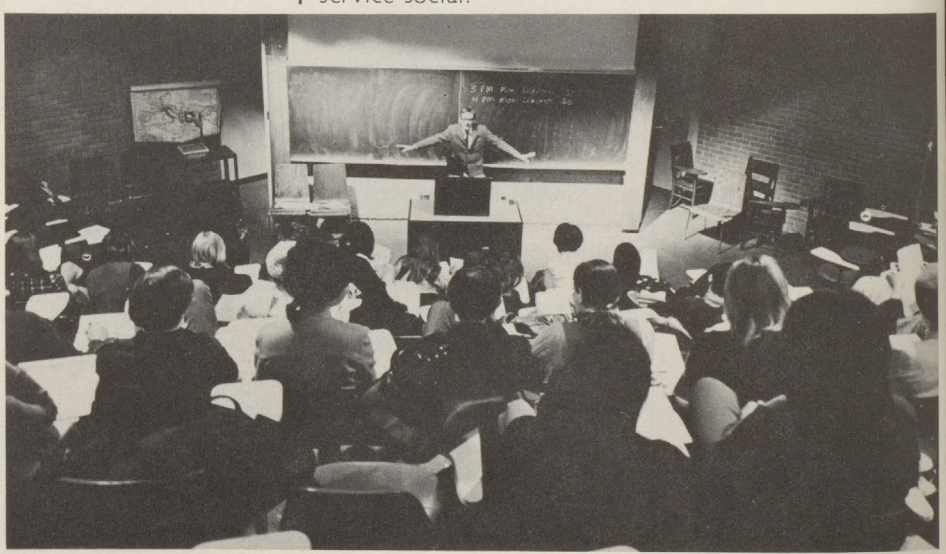
Admission normale

C'est en juin, lorsqu'elle aura reçu leur relevé de notes finales de CEGEP que l'université étudiera la demande d'admission des étudiants n'ayant pas reçu de préavis d'admission conditionnelle.

En cas de circonstances atténuantes, il est possible à un étudiant qui n'a pas obtenu son diplôme d'études collégiales et à qui il ne manque pas plus de deux cours de CEGEP s'adresser au bureau des admissions concernant ses possibilités d'admission. S'il est admis, cet étudiant sera tenu de suivre les cours nécessaires et d'obtenir son diplôme d'études collégiales avant la fin de sa première année d'étude à McGill. Le DEC sera décerné par l'établissement fréquenté précédemment. Il est vivement conseillé de passer son DEC durant l'été qui précède son inscription à l'université.

Admission à un programme contingenté

Les facultés et écoles dont le nom suit n'acceptent qu'un nombre limité d'étudiants: architecture, chirurgie dentaire, sciences de l'éducation, droit, médecine, sciences infirmières, physiothérapie et ergothérapie, ainsi que service social.



Il est conseillé aux candidats à un programme contingenté d'indiquer un programme de deuxième choix sur leur formulaire de demande d'admission. En cas de refus d'un étudiant par la faculté ou école qu'il a indiquée en premier choix, sa candidature fera d'office l'objet d'un examen de la part de l'école ou de la faculté qu'il a indiquée en second choix. Toutefois, tout étudiant candidat aux facultés d'agriculture, de chirurgie dentaire, de droit ou de médecine ou à l'école des sciences de l'alimentation, qui indique l'une de ces dernières comme faculté ou école de second choix, est tenu de présenter une demande d'admission distincte à chacune des facultés qui l'intéressent.

Admission des étudiants "adultes"

L'université McGill admet également des étudiants adultes (23 ans et plus)", résidants du Canada, qui ne possèdent pas les diplômes normalement exigés pour entrer à l'université. On entend généralement par étudiant "adulte" toute personne qui n'a jamais été inscrite à un programme universitaire.

Seules les facultés d'agriculture, des arts, des sciences de l'éducation, de génie, de gestion, de musique, d'études religieuses et des sciences admettent des étudiants "adultes". Les facultés d'agriculture, de génie, de gestion et des sciences imposent à ces étudiants des conditions préalables particulières.

Pour tout complément d'information, veuillez vous adresser au bureau des admissions de l'université (392-5300).

Tout étudiant désireux de s'inscrire en vertu de ce règlement doit soumettre à l'appui de sa demande les pièces justificatives énumérées ci-après. Les demandes dûment remplies sont examinées par le comité des admissions qui informe chaque candidat de la décision prise à son sujet le plus rapidement possible. Si le comité estime qu'un candidat ne répond pas aux conditions requises au moment de sa demande, il peut inviter celui-ci à suivre certains cours dans un CEGEP ou un autre établissement et à présenter une nouvelle demande ultérieurement.

1) Justification d'âge: tout candidat doit avoir 23 ans révolus au premier septembre pour être admis à la session d'automne, et au premier janvier pour être admis à la session d'hiver.
2) Le formulaire intitulé *Educational Summary Sheet* (Relevé de scolarité) qui fait partie du dossier de demande d'inscription fourni par le bureau des admissions.

3) Tous les relevés de notes relatifs aux études effectuées à l'école secondaire, au CEGEP, dans un institut de technologie ou autre établissement d'enseignement.
4) Deux lettres de recommandation: Les formules confidentielles de recommandation incluses dans le dossier de demande d'inscription doivent être remises à deux répondants compétents tels que d'anciens professeurs, employeurs, etc.
5) Le curriculum vitae: Chaque candidat doit remettre un curriculum vitae établi d'après les directives données sur la formule personnelle récapitulative.

Une entrevue peut ou non s'avérer nécessaire. Si le bureau des admissions en exige un, il préviendra le candidat en temps utile.

Pour tous renseignements au sujet des demandes d'admission, veuillez vous adresser au directeur du bureau des admissions.

Étudiants venant d'autres établissements universitaires

Chaque année, l'université McGill admet des étudiants venant d'autres universités et collèges. Ces étudiants doivent répondre aux critères d'admission de tout nouvel étudiant à McGill et doivent avoir obtenu des résultats au-dessus de la moyenne durant leurs études universitaires. Dans la plupart des facultés (certaines différences peuvent exister en ce qui concerne les programmes contingentés), il faut obtenir un minimum de 60 crédits ou suivre quatre semestres de cours avant d'obtenir un diplôme; à la faculté des arts, il faut un minimum de 45 crédits. Pour de plus amples renseignements, veuillez vous adresser au bureau des admissions de l'université.

4. Frais scolaires, bourses, et aide financière

Frais de scolarité et frais spéciaux

L'Université se réserve le droit de modifier sans préavis le montant des droits et frais.

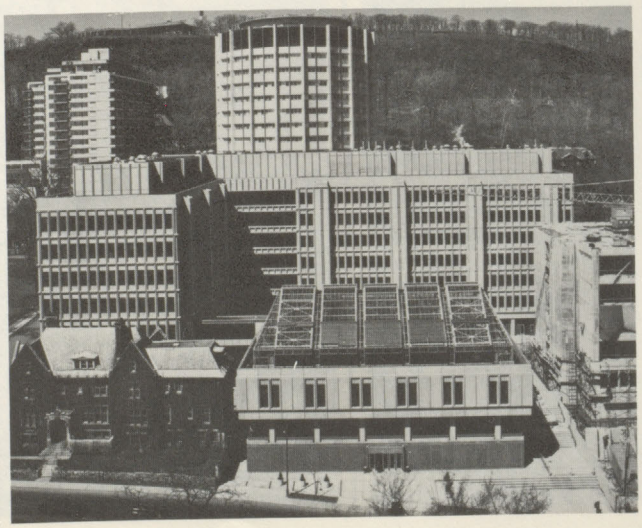
Les frais de scolarité pour l'année 1976-1977 s'élèvent à $19 par crédit, ce qui comprend les frais d'inscription, de scolarité, de laboratoire et de bibliothèque.

Il convient d'ajouter les frais supplémentaires suivants (pour l'année 1976-77):

Services aux étudiants	$70
Société des étudiants (varie selon la faculté)	$25-$49

Certaines facultés font exception à la règle: les facultés de chirurgie dentaire, de médecine (diplôme de M.D.) et la faculté des études supérieures et de la recherche (voir *Announcement*). L'école des sciences infirmières et la faculté de droit exigent de chaque étudiant qu'il se procure un certain matériel.

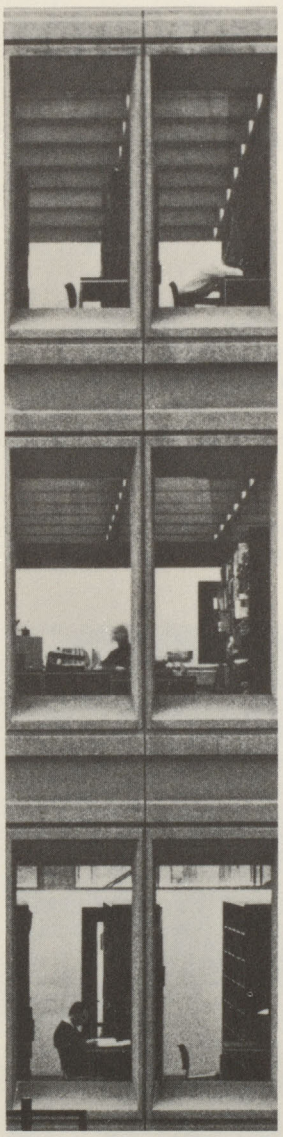
Les frais supplémentaires que doivent acquitter les étudiants à temps partiel (dont le nombre de crédits est inférieur à 18) sont moindres.



Aide financière

Pour avoir droit à une aide financière, un étudiant doit être de nationalité canadienne et avoir résidé au moins un an dans la province à laquelle il demande cet appui financier. Les immigrants reçus, quant à eux, doivent avoir travaillé pendant au moins un an (et parfois deux) avant de pouvoir faire une demande d'aide financière provinciale.

Les résidents du Québec qui veulent demander l'aide financière du service des prêts et des bourses du ministère de l'Éducation doivent se procurer un formulaire de demande auprès du bureau d'aide aux étudiants de l'université McGill, 3465, rue Peel à Montréal (Québec) H3A 1W7. Ces formulaires ne sont généralement pas disponibles avant le premier mai.



C'est au bureau d'aide aux étudiants qu'il appartient de décider du montant et de la nature de l'aide financière octroyée; ce bureau juge que les premiers responsables en la matière sont les parents de l'étudiant et l'étudiant lui-même.

Toute demande de bourse d'inscription doit être adressée au bureau des admissions. S'il y a également demande d'aide financière, le bureau des admissions transmet cette dernière au bureau d'aide aux étudiants par l'entremise du comité des bourses universitaires (University Scholarships Committee).

L'université McGill accorde également des bourses d'études et des prêts aux étudiants de premier cycle qui n'ont pas droit aux bourses d'inscription, notamment aux étudiants non canadiens dans certaines circonstances.

Bourses d'inscription

L'université a pour principe de reconnaître et de rendre honneur au savoir et c'est parmi les étudiants hors pair ou ceux qui prévoient de le devenir que le Comité des bourses universitaires choisit les lauréats de bourses.

Lorsqu'un étudiant sélectionné est dans le besoin financièrement, l'université se charge d'assurer ce besoin dans toute la mesure de ses moyens. Cependant, pour avoir droit à une bourse d'une valeur financière élevée, l'étudiant doit remplir la demande d'aide financière qui se trouve au verso de la demande de bourse d'inscription.

Tout candidat à une bourse d'inscription doit présenter une demande à cet effet au plus tard le premier mars s'il entend commencer ses études au mois de septembre et au plus tard le premier novembre s'il entend commencer ses études au mois de janvier. On peut se procurer les formulaires de demande à l'adresse suivante:

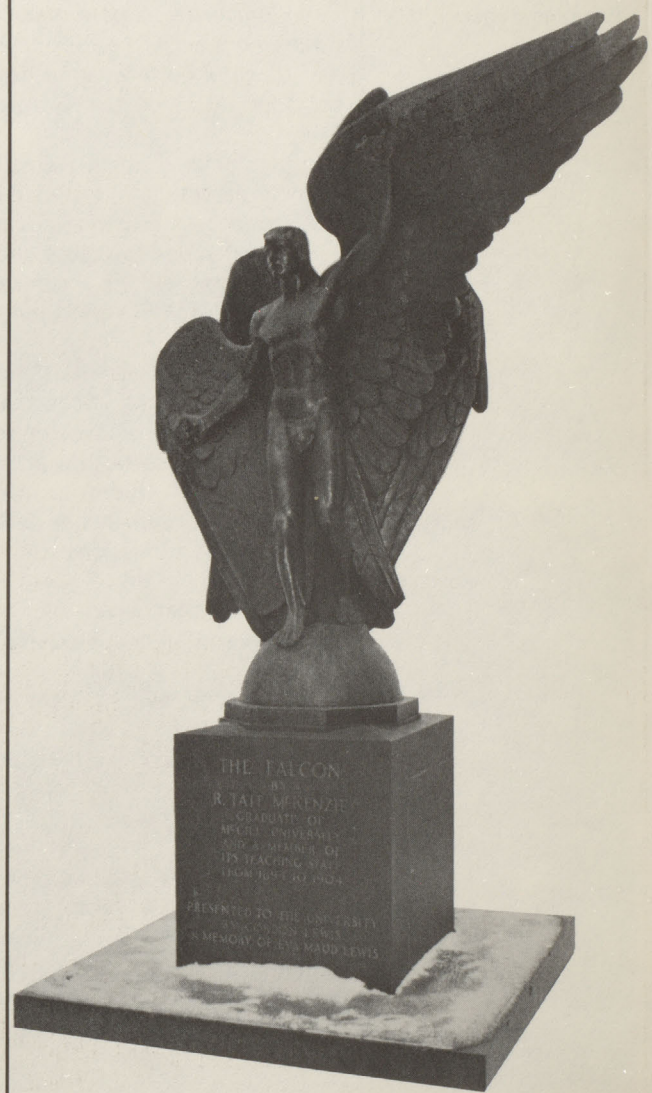
Bureau des admissions
Université McGill
C.P. 6070, Station A
Montréal (Québec) H3C 3G1

Le cas de tout étudiant qui remplit cette demande est d'office pris en considération pour chaque bourse d'inscription à laquelle il est admissible.

Les bourses d'inscription sont réservées aux citoyens canadiens, aux immigrants reçus ayant 12 mois de résidence au Canada ou aux diplômés des écoles secondaires, collèges et autres établissements d'enseignement du Canada. Tous les candidats à ces bourses doivent entrer en première année d'un programme universitaire. Les bourses ne sont décernées qu'aux étudiants inscrits à un programme régulier menant à un diplôme.

Dans le cadre du premier cycle, la plupart des bourses sont renouvelables chaque année pourvu que l'étudiant obtienne des résultats scolaires suffisamment bons.

Une fois qu'un étudiant est inscrit à un programme régulier à McGill, toutes les bourses sont octroyées d'office d'après les résultats des examens de fin d'année. Aucune demande n'est exigée.



5. Services du campus offerts aux étudiants

Campus de McGill

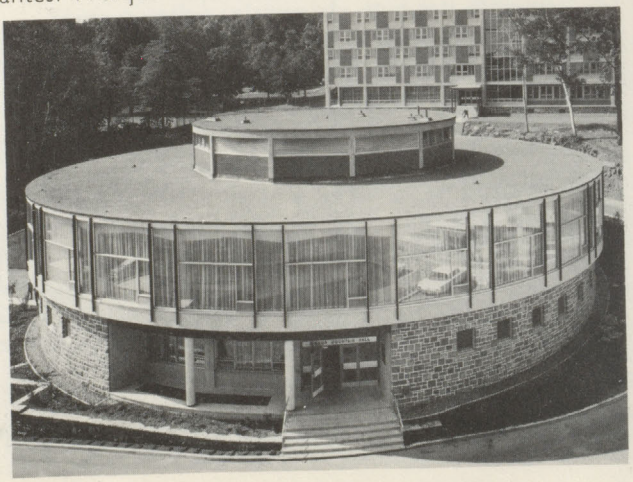
Résidence universitaire

Quatre résidences mixtes peuvent recevoir environ 800 étudiants: il s'agit des résidences Douglas, Gardner, McConnell et Molson. La plupart des chambres sont des chambres individuelles bien qu'il existe quelques chambres doubles. La résidence Douglas possède sa propre salle à manger alors que les trois autres se partagent une salle à manger commune située au Pavillon Bishop Mountain.

Le bureau des admissions de l'université envoie les formulaires de demande de logement en même temps que tous les formulaires d'inscription. Les formulaires doivent être retournés le plus tôt possible. Toute demande de renseignements relative aux résidences mixtes doit être adressée à:

Residence Secretary
Bishop Mountain Hall
3935, rue University
Montréal (Québec)
H3A 2B4

La résidence universitaire du collège Royal Victoria qui peut recevoir 257 résidents est réservée aux étudiantes. Presque toutes les chambres sont des chambres



individuelles, mais il existe néanmoins quelques chambres doubles. Toutes étudiante qui désire se loger dans cette résidence doit remplir le formulaire du collège Royal Victoria qu'elle pourra se procurer soit auprès du bureau des admissions de l'université soit auprès du collège lui-même. Les formulaires dûment remplis doivent être envoyés avant le 1er mai au:

Collège Royal Victoria
3425, rue University
Montréal (Québec)
H3A 2A8

Frais de résidence (pour l'année 1976-77)—dans une résidence mixte, un étudiant peut s'attendre à payer environ $1,708 pour une chambre individuelle et les repas cinq jours par semaine pendant l'année universitaire normale de septembre à avril. Les frais s'élèvent à $1,875 au collège Royal Victoria mais comprennent les repas sept jours par semaine.

Le nombre de places étant limité, les demandes d'admission seront examinées selon leur ordre d'arrivée. Les étudiants admis doivent verser un acompte de $100 dont la moitié sera créditée aux frais de résidence.

Campus Macdonald

Des résidences similaires existent au collège Macdonald. Les frais de résidence (pour l'année 1976-77) s'élèvent à $610 pour une chambre double et $670 pour une chambre individuelle; l'étudiant qui veut y prendre ses repas cinq jours par semaine doit payer $630 en sus. Toute demande de renseignements doit être adressée à:

Residence Office
Collège Macdonald
Ste-Anne de Bellevue (Québec)
H0A 1C0

Logement hors-campus

Le service de logement hors-campus est offert toute l'année par l'université McGill dans le cadre des services offerts aux étudiants. Ses bureaux sont situés 3465, rue Peel à Montréal et sont ouverts du lundi au vendredi de 9h à 17h. Ce service a été doté d'un ordinateur afin d'élargir son champ d'activité et d'accroître son utilité pour les étudiants qui cherchent à se loger. Le service tient à jour une liste de tous les logements disponibles susceptibles d'intéresser les étudiants de McGill. La plupart des listes font l'objet d'une vérification afin d'établir quelques normes minimales de salubrité, etc. Les listes ne contiennent que des logements situés à proximité soit de l'université soit d'une station de métro ou d'un arrêt d'autobus.

Services aux étudiants

Doyen des services aux étudiants

Le doyen est chargé de coordonner tous les services offerts aux étudiants et c'est lui qui assure la liaison avec l'Association des étudiants. Le doyen accorde des consultations aux étudiants qui désirent discuter de problèmes dont ne s'occupent pas les autres services et organismes du campus. Le bureau maintient une politique d'"ouverture" à l'égard des étudiants qui sont invités à recourir à ses services en tout temps. Ce bureau se trouve 3465, rue Peel.

Aide financière aux étudiants. Service d'accueil des étudiants étrangers

Ce service qui se trouve 3465, rue Peel a été créé pour aider les étudiants dans les domaines suivants:

- Bourses et demandes de prêts et bourses de McGill
- Questions d'aide financière accordée par les gouvernements
- Renseignements et formules de demande relatifs au service des prêts et bourses du Québec.

Toute question relative aux étudiants étrangers doit

lui être adressée en priorité. Les étudiants étrangers désireux d'obtenir un renseignement quelconque au sujet de l'assurance obligatoire doivent s'adresser à ce bureau.

Service de santé des étudiants

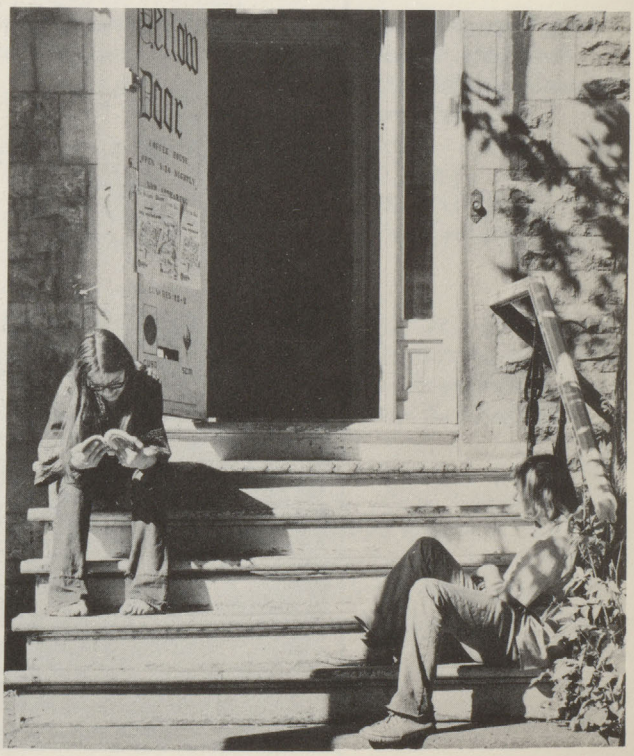
Le service de santé des étudiants de l'université comprend un centre clinique principal situé 517 ouest, avenue des Pins et il est à la disposition de tous les étudiants de McGill. Le personnel de ce service se compose de médecins hommes et femmes, spécialistes en médecine générale, en gynécologie, en médecine interne, en médecine mentale et en chirurgie ainsi que d'infirmières ayant l'habitude des problèmes de santé des étudiants. Ce service est ouvert de 8h30 à 17h du lundi au vendredi.

Service d'orientation

Le service d'orientation a pour but d'aider les étudiants qui éprouvent de la difficulté à s'habituer aux pressions, aux défis et aux perspectives du milieu universitaire. Divers services psychologiques sont à la disposition des étudiants ainsi qu'une bibliothèque de renseignements sur les carrières. Le service d'orientation se trouve au 522 ouest, avenue des Pins.

La pastorale

Ce service a pour but de répondre aux besoins de tous les étudiants par l'entremise de rencontres individuelles ou de groupe. Il est parrainé par les associations religieuses du campus. Pour de plus amples renseignements, prière de s'adresser au secrétaire du service dont le numéro de téléphone est 392-5890 ou au bureau situé 3484 rue Peel.

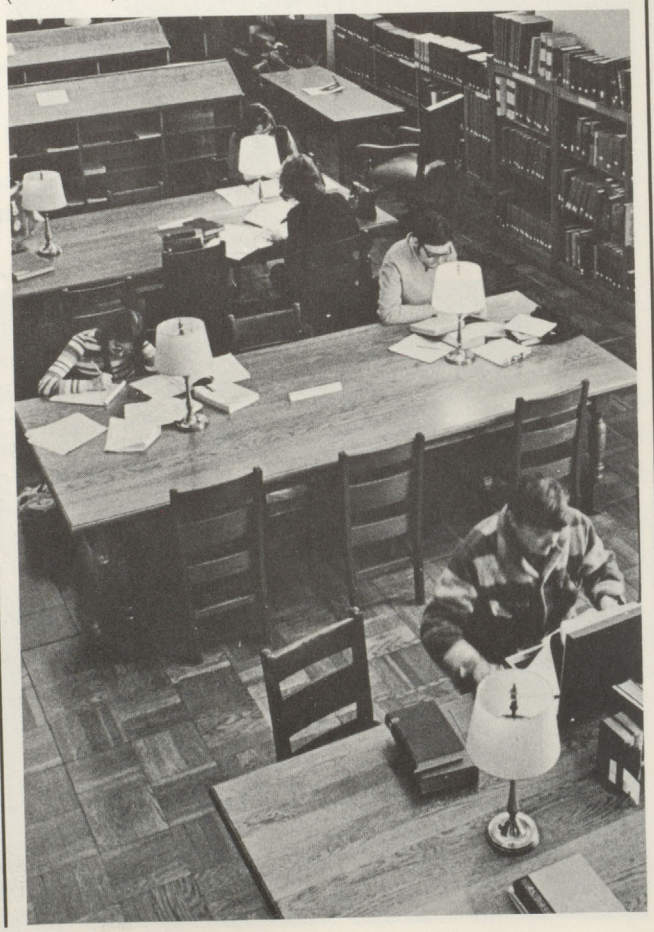


Service d'assistance juridique

Le centre universitaire (University Centre) abrite un service d'assistance juridique patronné et assuré par des étudiants qui bénéficient de l'aide d'étudiants de la faculté de droit.

Cours individuels. Arts et sciences

De concert avec les facultés des arts et des sciences et l'Association Universitaire des arts et des sciences, le bureau du doyen des étudiants parraine un vaste programme de cours individuels: les étudiants de McGill peuvent bénéficier de ces services au cours des trimestres d'automne et de printemps. Les cours individuels peuvent être donnés soit par des étudiants de 2e et 3e années, soit par des étudiants post-universitaires spécialisés dans la majorité des domaines propres aux facultés. Les cours durent une heure environ. Les frais encourus par l'étudiant sont minimes et dépendent du nombre d'étudiants inscrits au même cours. Le bureau est situé au sous-sol du collège Royal Victoria, 3425, rue University, et il est ouvert de 9h à 16h du 1er octobre au 30 avril. En dehors de cette période, il est possible d'avoir des renseignements en téléphonant au bureau du doyen des services aux étudiants (392-5364) ou au Pavillon Dawson (392-5082). Mrs. M. Aikens en est la coordonnatrice (392-6741).



Centre de main-d'oeuvre du Canada

Le bureau de placement des étudiants du Centre de main-d'oeuvre du Canada offre toute une gamme de services aux étudiants de McGill et à ceux qui viennent d'obtenir leur diplôme. Tout étudiant qui est à la recherche de renseignements sur les possibilités d'emploi et de carrière est invité à consulter un conseiller en placement. Des employeurs s'adressent chaque année au bureau de placement des étudiants dans le but d'engager des étudiants à la recherche d'un emploi permanent ou d'un emploi d'été. Tout étudiant qui a eu une entrevue avec un conseiller est ensuite dirigé vers l'emploi vacant qui lui convient. Les tableaux d'affichage du C.M.C. sont couverts d'offres d'emploi. Le bureau met à la disposition des étudiants toutes sortes de brochures, comme un annuaire des employeurs, un petit livre de conseils sur la façon d'établir un curriculum vitae, de se préparer à une entrevue, etc.

Campus de McGill

Activités estudiantines

Situé à 3480, rue McTavish, le centre universitaire, mieux connu sous le nom de *Student Union,* sert à toutes les activités parascolaires des étudiants. En plus d'abriter la permanence de l'association des étudiants, du journal des étudiants (McGill Daily) et de Radio McGill, cet édifice sert de siège social aux clubs patronnés par l'association des étudiants, dont l'Association internationale des étudiants qui est l'organisme de coordination de tous les clubs estudiantins étrangers.

Ces clubs organisent toutes sortes de programmes; le *McGill Outing Club* s'occupe d'activités en plein air, l'*Amateur Radio* assure un service télégraphique gratuit, *Community McGill* propose des services communautaires, pour n'en nommer que quelques uns.

A la même adresse, on trouve une salle de T.V., une pizzeria, une cafétéria qui sert des plats chauds, ainsi que des salles de réunion à l'intention des groupes d'étudiants.

Campus Macdonald

Le centre universitaire ou *Centennial Centre* renferme de nombreuses installations destinées aux activités parascolaires des étudiants: salon, snack bar, salles de réunion, salles de conseil, librairie, bureaux de publication, salle de bal, salles de ping pong, de billard, bar, discothèque.

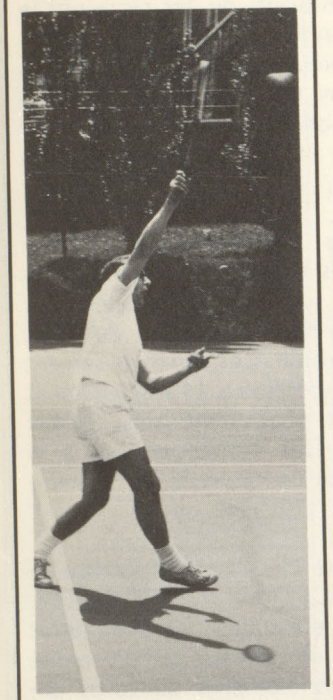
Athlétisme

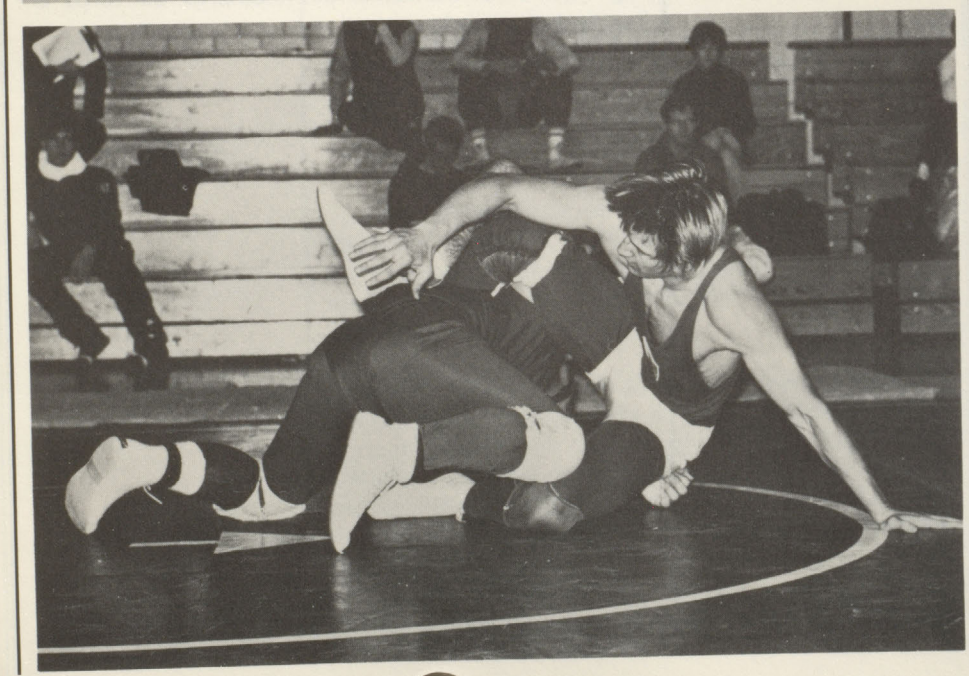
Les installations d'athlétisme, d'éducation physique et de loisirs de McGill sont groupées dans le Gymnase

Currie Memorial au stade Molson et au stade d'hiver. Les installations sportives du gymnase comprennent des terrains de basketball, de squash, de badminton et de volleyball, une piscine, une salle de gymnastique, une salle de lutte, d'escrime, de judo et d'athlétisme. Il existe également une piscine près du collège Royal Victoria réservée aux étudiantes.

Tous les étudiants peuvent suivre des cours d'éducation physique dans divers sports, tandis que de nombreux clubs sportifs intra-muros offrent la possibilité de participer à des sports pour se détendre.

Au niveau intercollégial, McGill participe à des sports parrainés par l'Association athlétique des universités du Québec et l'*Ontario Women's Intercollegiate Athletic Association.*





Bibliothèques de l'université

Parmi ces bibliothèques, citons la McLennan Research Library, la Redpath Undergraduate Library, les bibliothèques des diverses facultés et des divers départements de l'université ainsi que la bibliothèque du collège Macdonald à Ste-Anne-de-Bellevue.

Redpath Undergraduate Library. C'est une bibliothèque de prêt à libre accès renfermant quelque 118,000 livres et préiodiques. Les étudiants du 1er cycle ont le droit toutefois d'utiliser aussi les services de la bibliothèque de recherche McLennan et des autres bibliothèques de l'université. Parmi les services offerts par la bibliothèque Redpath, mentionnons les services publics, le service de prêt restreint et la salle de lecture des périodiques.

L'audiovidéothèque est munie de 225 cabines d'études équipées d'appareils audio-visuels comme des projecteurs de diapositives, des magnétophones, des projecteurs de films fixes, des projecteurs de films super-8 et des écrans de télévision. Ces appareils servent aux exercices individuels du laboratoire, à l'enseignement modulaire, à l'enseignement programmé ainsi qu'aux programmes de rattrapage. Des moniteurs sont à la disposition des étudiants qui le désirent au "Centre d'accueil".

La librairie de l'université

La librairie de l'université McGill est situé dans le pavillon Samuel Bronfman, 1001 Ouest, rue Sherbrooke. Elle a en main toutes sortes de manuels, livres et autres ouvrages. Elle est administrée en commun par un comité regroupant des étudiants, des membres du corps enseignant et de l'administration.

6. Renseignements divers

Politique linguistique

A l'université McGill, la langue d'enseignement est l'anglais. Toutefois, les étudiants qui le désirent peuvent rédiger leurs travaux et examens en français; une bonne connaissance de l'anglais est néanmoins indispensable.

Tout étudiant titulaire d'un diplôme d'études collégiales (deux années de CEGEP), qu'il soit citoyen canadien ou immigrant reçu, est dispensé de passer un test de connaissance de l'anglais.

Toutefois, la faculté des sciences de l'éducation peut juger utile de vérifier les connaissances en anglais de ses candidats. Ceux-ci doivent en effet posséder une bonne maîtrise de l'anglais pour effectuer de bons stages d'enseignement et pour que la faculté des sciences de l'éducation puisse les recommander sans réserve au ministère de l'Education à la remise des diplômes comme enseignants dans les écoles de langue anglaise.

Il se peut que les étudiants qui arrivent au Canada munis d'un visa d'étudiant et qui n'ont pas fait deux ans d'études collégiales (CEGEP) soient tenus de passer un examen de connaissance de l'anglais. Ces étudiants seront avisés par le bureau des admissions le cas échéant.

L'université conseille aux étudiants dont la connaissance de l'anglais est insuffisante de suivre le cours d'été qu'offre le département d'anglais (English 100-150C); pour tout complément d'information, prière de téléphoner à 392-6740.

État de santé

Tout nouvel étudiant admis à l'université reçoit un questionnaire médical muni d'une enveloppe de retour portant l'adresse du service de santé de l'université. L'étudiant est tenu de remplir ce questionnaire et de le renvoyer le plus tôt possible au service de santé. Certaines facultés et écoles exigent des renseignements complémentaires.

Tout nouvel étudiant devra consulter l'un des médecins du service de santé de l'université au cours de sa

première année d'études à l'université. Le médecin examinera l'état de santé de l'étudiant et procédera à un examen médical s'il le juge nécessaire. Il se peut qu'il veuille prendre une radiographie pulmonaire de l'étudiant ou lui faire subir des tests de laboratoire. Un nouvel examen peut s'avérer nécessaire dans l'intérêt de l'étudiant ou dans celui d'autrui.

Pre-inscription

Tout titulaire d'un diplôme de CEGEP dont la demande d'admission à McGill a été approuvée se verra convoquer à une entrevue avec le conseiller pédagogique du département, de la faculté ou de l'école qui l'intéresse. Cette entrevue a lieu bien avant l'inscription afin de permettre au conseiller de discuter avec l'étudiant de son programme d'études, de l'informer des choix qui s'offrent à lui et de signer un "Plan d'études" (Study Plan Form).

Orientation universitaire

Le bureau du vice-doyen ou le directeur de chaque faculté ou école est en mesure de fournir des renseignements et des conseils sur les programmes d'études, le choix des cours et les procédures administratives telles que les formalités d'inscription, les transferts, les examens de reprise, etc. Ce service est ouvert tous les jours de la semaine de 9h à 17h.

Semaines d'accueil

Ce service est destiné à l'orientation des étudiants admis aux écoles et facultés suivantes avant qu'ils ne procèdent à leur pré-inscription: arts, sciences de l'éducation, gestion, sciences infirmières, physiothérapie et ergothérapie et faculté des sciences. Ce service a pour but d'aider les nouveaux étudiants à choisir leurs cours et de les familiariser avec les divers aspects de l'université. Il est ouvert de 9h à 16h du lundi au vendredi durant trois semaines à compter de la mi-août. Une brochure explicative est jointe à tout avis d'admission définitive.

Voici en quoi consiste une journée d'orientation: Réunion de groupe le matin pour discuter des procédures d'inscription, des services offerts aux étudiants, du programme de la journée et des questions d'ordre général. Visites commentées du campus en matinée et en après-midi sous la direction d'étudiants de l'université.

Une réunion de rencontre est organisée tous les après-midi entre le personnel enseignant, les représentants des services aux étudiants et les nouveaux étudiants. Pour de plus amples renseignements veuillez téléphoner à 392-5084.

Système de crédits

A l'exception des facultés des études supérieures et de la recherche, de droit, de médecine et de chirurgie dentaire, toutes les autres facultés et écoles de McGill se servent d'un système de crédits pour déterminer le niveau d'études des étudiants. Chaque cours est doté d'un coefficient qui reflète l'effort requis de l'étudiant. Ce coefficient représente souvent le nombre d'heures de cours hebdomadaires obligatoires. Un cours ayant un coefficient trois indique généralement trois heures de cours (travaux pratiques de laboratoire et colloques y compris ou non) par semaine pendant un trimestre.

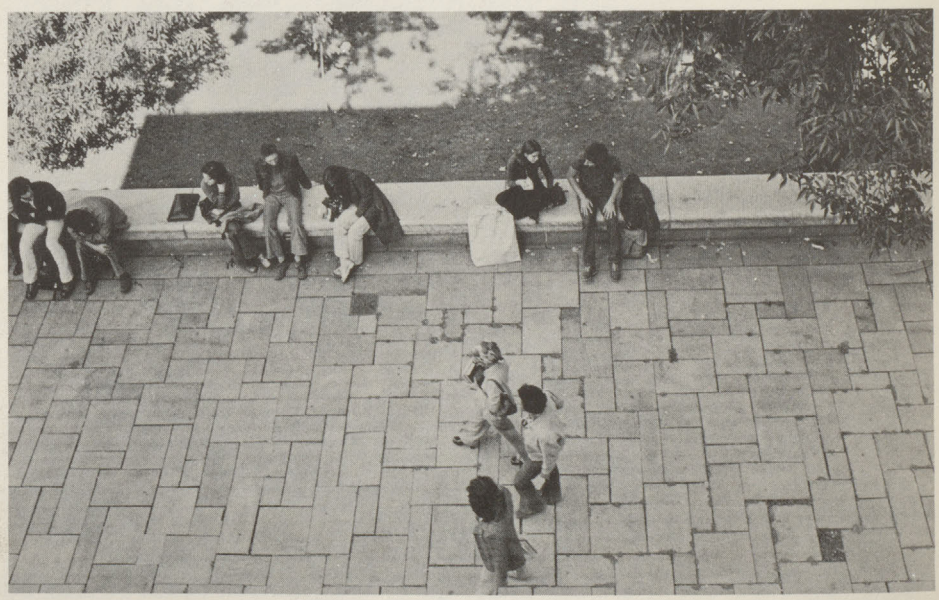
Le volume normal de cours de la majorité des programmes est de 15 crédits par trimestre. Les étudiants ayant obtenu des résultats satisfaisants peuvent être autorisés à accumuler davantage de crédits par trimestre, cela étant fonction du programme auquel ils sont inscrits et de la moyenne de leurs notes pondérées.

Entente relative au transfert des crédits universitaires

Tout étudiant de premier cycle* inscrit à temps complet de même que tout étudiant des deuxième et troisième cycles** inscrit soit à temps complet soit à temps partiel à l'université McGill peut, avec l'autorisation écrite du doyen de la faculté qu'il fréquente, s'inscrire chaque année à un maximum de 40% d'un programme complet offert par une autre université de la province de Québec. Ces cours pondérés, classés et suivis avec succès d'après les normes de l'université qui les dispense, font l'objet d'une reconnaissance complète de la part de McGill aux fins du grade postulé par l'étudiant.

* (Baccalauréats en architecture, arts, droit, sciences de l'éducation, gestion, sciences infirmières, génie, musique, physiothérapie et ergothérapie, sciences, agriculture, sciences de l'alimentation et études religieuses.

**(Maîtrises ou doctorats).



Il s'agit là d'une prérogative conditionnelle; en effet, le cours choisi doit figurer au programme de l'étudiant et ne pas être dispensé à McGill.

Tout étudiant qui souhaite profiter de cette entente est prié de se renseigner auprès du vice-doyen de la faculté où il est inscrit; cette entente est sujette aux conditions suivantes:

i) Les autres universités concernées peuvent à leur gré refuser d'admettre un étudiant à l'un quelconque de leurs cours;
ii) l'obligation pour l'étudiant de se conformer au programme fixé par McGill n'est nullement modifiée par cette entente.
iii) Il appartient à l'étudiant de s'assurer que l'horaire de ses cours à McGill lui permet effectivement de suivre des cours à l'une quelconque des autres universités en question;
iv) les universités concernées dégagent toute responsabilité en cas de chevauchement d'horaires d'examen.

Tout étudiant que cette prérogative intéresse doit remplir le formulaire de *Transfert de crédits* qu'il peut se procurer au bureau du registraire. Ledit formulaire comprend les autorisations universitaires nécessaires ainsi que l'autorisation du directeur du service financier; il assure par ailleurs le transfert d'office et gratuit de l'université-mère à l'université d'accueil ainsi que le report automatique des notes et crédits à l'université-mère.

Annuaires de l'université

Voici une liste partielle de nos annuaires qui peut vous être utile. L'université envoye chaque année des ensembles d'annuaires au conseiller d'information scolaire et professionnelle ou au conseiller en orientation de chaque collège. Si vous voulez recevoir un annuaire déterminé ou obtenir de plus amples renseignements, veuillez vous adresser au

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Montréal (Québec) H3A 1G1
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392-5954

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Faculty of Law

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—Bachelor of Commerce
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Octobre 1976

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